DOCUMENT RESUME

ED 459 303 UD 034 611

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TITLE	Increasing Opportunity To Learn via Access to Rigorous Courses and Programs: One Strategy for Closing the Achievement Gap for At-Risk and Ethnic Minority Students.
INSTITUTION	North Carolina State Dept. of Public Instruction, Raleigh. Div. of Accountability.
PUB DATE	2001-05-00
NOTE	75p.
AVAILABLE FROM	For full text: http://www.ncpublicschools.org/closingthegap/IncreasingOpportunities.pdf.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Academic Achievement; *Academically Gifted; Access to Education; *Advanced Placement Programs; American Indians; Black Students; Elementary Secondary Education; *Enrollment Trends; High Risk Students; Hispanic American Students; *Honors Curriculum; *Minority Group Children; Public Schools
IDENTIFIERS	American Indian Students

ABSTRACT

This report analyzes the under-representation of North Carolina's black, Hispanic American, and Native American students in honors courses, advanced placement (AP) courses, and academically and intellectually gifted (AIG) programs. Data came from the North Carolina Department of Public Instruction's database on all public schools and from surveys that gathered information on elementary and middle level AIG programs and high school advanced curriculum offerings. Site visits were conducted to interview students, parents, teachers, counselors, and principals. Results found a significant, widespread gap between white and minority students in proportional percentages of students enrolled in such programs. Achievement and learning gaps led to lower subsequent identification for AIG programs in early and middle grades, which in turn led to lower enrollments in high school AP and honors courses. Schools generally used multiple strategies for identifying AIG students. Approximately half of the schools allowed self-selection into honors and AP courses and dual enrollment into community college courses. Some schools had better approaches to proportional enrollment in advanced courses for minority students than others. The report makes 20 recommendations (e.g., ensure that all students take Algebra I before entering ninth grade, and systematically seek out high-performing minority students). (Contains 34 references.) (SM)

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ED 459 303

Increasing Opportunity to Learn via Access to Rigorous Courses and Programs:

One Strategy for Closing the Achievement Gap for At-Risk and Ethnic Minority Students

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Submitted to the State Board of Education
May 2001

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Foreword

The North Carolina State Board of Education submits the report - *Increasing Opportunity to Learn via Access to Rigorous Courses and Programs: One Strategy for Closing the Achievement Gap for At-Risk and Ethnic Minority Students* - in response to SL2000-67, Sec. 8.28(b). This legislation directed the State Board of Education to study the underrepresentation of minority and at-risk students in Honors classes, Advanced Placement (AP) classes, and academically and intellectually gifted (AIG) programs; to evaluate whether this underrepresentation contributes to the gap in student achievement; to examine the criteria used to identify whether a student is eligible for one of these classes or programs and how objective these criteria are; and to explore the extent to which low academic expectations contribute to the underrepresentation.

This report documents and analyzes the underrepresentation of minority students in Honors courses, AP courses, and AIG programs. It concludes that the gap between White and minority (specifically Black, Hispanic, and American Indian) students in proportional percentages of students enrolled in such programs is significant and widespread. While it is impossible to determine causality without experimental designs, these analyses show that achievement and learning difference gaps lead to lower subsequent identification for AIG programs in early and middle grades, which in turn contribute to lower enrollments in high school AP and Honors courses. Minority students who are identified as AIG in the earlier grades are more likely to be enrolled in more advanced courses in high school. That is, the cycle likely exacerbates the problem as students move through school. Therefore, underrepresentation likely contributes to the gap in student achievement, but the reverse is also true.

Schools, for the most part, are using multiple strategies for identifying students as AIG. Article 9B, passed in 1996, gives schools flexibility in how AIG students are identified, and many schools seem to be using this flexibility to better identify minority students. Others need to improve their strategies, and this study will help the NC Department of Public Instruction to continue giving guidance to these LEAs to improve existing identification strategies. Based on a survey returned by half the high schools in the state, approximately half of those high schools allow self-selection into Honors Courses (57%), AP Courses (48%) and Dual Enrollment into college/community college courses (42%). However, about one-fourth of the high schools surveyed reported that qualified students decline placement into AP courses either "often or very often." In addition, not all high schools are able to offer a large number of advanced courses for logistical and other reasons. So the challenges appear both in terms of access and placement, as well as student motivation.

The report also shows that, while the participation gap exists statewide, there are some schools that better approach a proportional enrollment in advanced courses for their minority students. The researchers offer a number of suggestions and recommendations based on their findings, but they conclude that the most important aspect of this challenge is the **will** to do something about it. Awareness of the extent of the problem is a beginning step in asserting that will.

The North Carolina Department of Public Instruction (DPI) is planning to respond to this report in several ways.

- The report will be disseminated to all school superintendents and members of the Superintendent's advisory committees, placed on the DPI Web Page, and "advertised" through the DPI's principal and teacher on-line newsletters.

- It will be shared and discussed with the DPI Commission on Closing the Gap, chaired by Dr. Robert Bridges, the Compliance Commission for Accountability, as well as the Closing the Gap Section in the Division of School Improvement for actions that may be appropriate for those groups.

- An intra-agency team consisting of members from all relevant DPI Divisions will be convened to determine how the recommendations can be addressed in an expeditious manner. Implications for various Agency guidelines, publications, grant seeking, sharing promising practices, or other actions will be explored.

This evaluation is a significant step in addressing a key barrier to high levels of achievement for many minority students. We are eager to continue studying its implications as we find ways to reduce the achievement gap between White students and those of ethnic minority groups.

Phillip J. Kirk, Jr., Chair, N. C. State Board of Education

Michael E. Ward, Superintendent, N. C. Department of Public Instruction

Evaluation Process and Acknowledgments

This evaluation of the underrepresentation of minority and at-risk students in advanced programs and courses was conducted primarily by external evaluators and guided by an intra-agency team in the North Carolina Department of Public Instruction (DPI) consisting of representatives from the Divisions of Accountability Services, the Exceptional Children Division, and the Division of Instructional Services. Dr. William Darity, UNC-CH and Duke University, was the lead external evaluator, joined by Dr. Karolyn Tyson, UNC-CH, and Dr. Domini Castellino, Duke University. Dr. Carolyn Cobb, Evaluation Section, Division of Accountability Services coordinated the DPI team, joined by Dr. Bradley McMillen (Accountability Services), Valorie Hargett and David Mills (Exceptional Children Division), and Dr. Wandra Polk (Division of Instructional Services).

Dr. Darity and his colleagues conducted analyses using extant DPI databases to examine the underrepresentation of minority students, variables associated with that underrepresentation, and distribution of the underrepresentation across various types of schools. Dr. McMillen was instrumental in identifying those databases, as well as sending and explaining the data to the evaluators. Dr. Darity provided oversight of the total evaluation and was a primary author. Dr. Castellino was a primary quantitative analyst. Dr. Tyson conducted team visits to the 11 case study schools, selected jointly by the external and DPI teams, and wrote the qualitative sections of the report. Dr. Polk participated in one of the case study visits. Mrs. Hargett provided the information on the current state of AIG practices and some of the current initiatives underway.

Dr. Cobb and Dr. Tyson led the development of the survey sent to all schools by Dr. Tyson - who conducted and interpreted all analyses of the survey results. Dr. Cobb, Dr. McMillen, and Mrs. Hargett made on-site visits to two LEAs (and schools in those LEAs) and conducted in-person and telephone interviews with representatives of two other LEAs that appeared to have some promising directions and practices emerging from their new plans under Article 9B.

Dr. Darity and his colleagues submitted the final report to DPI. Dr. McMillen provided key editing and formatting for the body of the report submitted by the external team. Dr. Cobb also contributed to the editing and developed the recommendations for the DPI team based on ongoing conversations and feedback, as well as the findings of the visits to leading LEAs.

Both internal and external evaluators communicated closely throughout the evaluation process. Dr. Darity and his team made recommendations based on the quantitative data, the survey data, and the case study visits. The DPI staff made recommendations based on observed program practices throughout the state and the visits or conversations with four LEAs and two schools with promising practices. On reviewing both sets of recommendations, there was considerable overlap, although some were unique; and the two sets were combined.

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I. State Context – Services for Academically or Intellectually Gifted (AIG) Students

Legislation Governing AIG Services

The North Carolina General Assembly enacted Article 9B in 1996 to broaden the definition of academically gifted to include

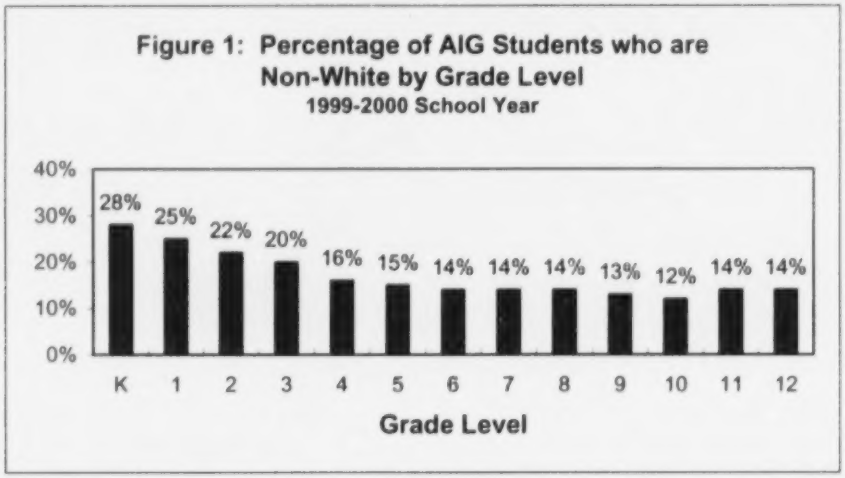
> *Academically or intellectually gifted students perform at substantially high levels of accomplishments when compared with others their age, experience, or environment. Academically or intellectually gifted (AIG) students exhibit high performance capability in intellectual areas, specific academic fields, or in both intellectual areas and specific academic fields. Academically or intellectually gifted students require differentiated education services beyond those ordinarily provided by the regular educational program. Outstanding abilities are present in students from all cultural groups, across all economic strata, and in all areas of human behavior.*

This legislation also required local boards of education to develop plans that give local education agencies (LEAs) greater control and flexibility for identification and services. Under the guidance of the North Carolina Department of Public Instruction (DPI) and Statewide Technical Assistance in Gifted Education (STAGE), LEAs began the task of addressing all components of the new legislation with a special focus on developing and implementing academically or intellectually gifted (AIG) programs for minority and economically disadvantaged students. LEAs were to develop three-year plans for the identification of and service delivery to AIG students. The first 3-year plan cycle is just ending (2000-2001) and new plans are currently in development. Both DPI and LEAs have been working with the new, flexible identification criteria and moving to develop guidelines for more targeted, focused, and rigorous programs to serve a variety of talented students.

Instead of using the traditional screening and identification process of standardized assessments for AIG placement, LEAs are developing multiple identification criteria so that no one criterion excludes a student from admission to gifted programs. A small increase in ethnic minority representation has been noted (see Figure 4 on page 16), but to date, a significant overall increase has not yet been achieved during the first three-year cycle of implementation of these plans.

LEAs, however, have strongly expressed a need for more time for the new changes made in identifying and serving AIG students to yield desired results. Given that tens of thousands of students who were identified before the new legislation went into effect are still in AIG programs, changes will occur slowly over time and will probably occur first in the elementary grades, since those are the years when students are typically first identified as AIG. Data from the 1999-2000 school year seem to support this shift, with minorities making up a larger percentage of the state's AIG population in the early elementary grades than in later grades

(Figure 1). Although it cannot be stated conclusively, this trend *could* be related in part to the new identification procedures ushered in by Article 9B.



Counting AIG students statewide is made more challenging under the new identification procedures, since LEAs have different identification methods and types of service delivery programs. Many LEAs are beginning to emphasize different levels of advanced service to students, from nurturing academic promise at earlier grades to intense accelerated learning for a few students. Which students are actually counted as AIG varies across LEAs. That is, some LEAs count only those few students served in pullout or highly targeted academic programs. Other LEAs count students who receive less intensive services that nonetheless exceed what is offered to typical students in the regular classroom, perhaps through a special focus within the regular classroom.

The quality and focus of service delivery may vary greatly. The DPI is working with LEAs and universities to develop models and guidelines that provide standards and criteria for focused service delivery, especially with respect to nurturing potential AIG students who show academic promise at an early age. In addition, it is increasingly recognized that increased minority and disadvantaged student representation in AIG programs will involve supporting the whole child, including meeting socio-emotional needs. A sense of confidence and self-efficacy, as well as support for rigorous work outside the school, are necessary to encourage participation and success in AIG programs and these traits may be less evident in some minority and at-risk students.

As the state moves into developing the next set of three-year program plans, LEA's are focusing heavily on **continuing** and **expanding** K-12 services to underrepresented ethnic minority and economically disadvantaged students. Priorities for the state in collaboration with LEAs and universities/colleges are:

- to provide earlier nurturing programs starting at the kindergarten level, that focus on creative and critical thinking skills, problem solving, social and emotional needs, and the development of student interests,
- to continue developing multiple criteria for appropriate assessment of students beyond the standardized cognitive and achievement tests that are the norm for most AIG programs across the nation, and
- to help LEAs develop better defined and rigorous levels of service delivery based on the differentiated needs of individual students. These service delivery levels should include social and emotional support mechanisms for students.

The programs listed below and in Section II represent some of the major initiatives underway across the state and are examples of the innovative programs emerging since the passage of Article 9B.

State AIG Initiatives

Nurturing Potential and Developing Talent K-3 Committee. This pilot program was constructed to nurture potential and talent that will lead to identifying students from underrepresented populations for AIG programs and to identify program components that will operate at the levels of readiness of individual students from different ethnic and economic backgrounds. This committee will oversee a three-year pilot program that will use research-based curriculum and professional development models, parental involvement strategies, and multiple assessments and criteria based on Mary Frazier's *Ten Core Attributes* for identifying high potential in minority students and students from other underrepresented populations. A grant proposal has been submitted through Duke University for additional funding.

Honors and Pre-Advanced Placement (AP) Gifted Curricula Development Institute Project. The use of rich, varied curricular gifted models based on the works of Howard Gardner, June Maker, Grant Wiggins, and Michael Thompson were introduced to a selected group of Honors and AP English teachers at the June 2000 Gifted Curricula Development Institute. The Honors and Pre-AP English curricula developed from this institute are presently being field tested throughout the state by these teachers. The advanced curricular resource study units developed through this institute will be made available to LEAs this fall. A second summer institute is in the planning stages for these teachers in order to continue the curricular initiative of designing rigorous and challenging courses that prepare students to enter AP classes. Ten counties are participating across the state in this two-year project: Union, Franklin, Gaston, Cherokee, Davidson, Robeson, Brunswick, Dare, Yadkin, and Rowan.

LEA Curriculum Project. According to June Maker from the University of Arizona, a national leader in developing promising identification strategies of gifted minority students, "Changes in identification practices must be accompanied by changes in curriculum and instruction and in the perceptions of those implementing, evaluating, and being served by special programs especially parents (Maker, 1996)." Buncombe County's AIG administrators/ specialists and the DPI AIG consultant have initiated a two-year gifted 5th and 6th grade curriculum-writing project. After local field-testing and revision, this multiple intelligences-

based, problem-centered curriculum will be shared with other LEAs if it shows promise in providing a rigorous curriculum that prepares students for Honors and AP classes.

Social-Emotional Guidance and Counseling (optional component to locally-developed AIG plans). Based on the national gifted program standards and focus group comments from state AIG program reviews, an *optional* socio-emotional guidance and counseling component has been added to the state rubric for locally developed plans. According to Karin Frey, Director of Research and Evaluation for the Committee for Children and co-author of *Promoting Social and Emotional Learning: Guidelines for Educators,* "Children's emotions can either facilitate academic learning, or they can act as a roadblock to that learning" (Elias et al., 1997). By adding this component to the local plans, it provides a more focused avenue for systemic planning to occur that will address the needs of the whole child. Many LEAs are planning to add, develop, and implement this component during the next three-year cycle.

University-Based AIG Initiatives

U-STARS – Using Science Talents and Abilities to Recognize Students [Dr. Mary Ruth Coleman,University of North Carolina – Chapel Hill]. The purpose of this Javits[1] grant is to support districts in early recognition and cultivation of potential in young students (preK-2) from economically disadvantaged and culturally diverse families. There are three collaborating districts – Edgecombe, Nash-Rocky Mount, and Northampton– working with project staff to demonstrate effective strategies for incorporating and sustaining the new identification and service delivery practices. One of the major goals in this project is to develop challenging and engaging science units and activities supporting the development of potential in young students.

INSIGHTS [Dr. Shelagh Gallagher, University of North Carolina – Charlotte]. INSIGHTS, a three-year Javits grant, is a program for middle school disadvantaged gifted (DG) students, their teachers and their parents. Evolving from an extensive review of literature on gifted education, INSIGHTS responds to the systemic needs of DG middle school students with a unique, multifaceted model uniting school, student and community. At the core of the model is an academic program with a focus on problem-based learning (PBL) that uses 1) differentiated lessons to identify top students on a unit-by-unit basis, 2) a two-to-three week interdisciplinary PBL unit with embedded differentiated activities, and 3) an additional three weeks of self-contained, pull-out programming based on a modified version of the Autonomous Learner Model[2] where students learn both self-directed study skills and also self-efficacy as a learner. A particularly strong feature of this grant is a parent and community component where parents develop strategies to help DG students through a Community Resource Group. Two middle schools, one in Gaston County and one in Wilson County, are project sites for the implementation of this grant.

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[1] The Jacob K. Javits grant program is administered by the U. S. Department of Education. The program provides grants to help build capacity in schools for identifying and meeting the needs of gifted and talented students.

[2] The Autonomous Learner Model is a gifted education model focused on helping students become independent learners and helping them develop the ability to monitor and evaluate their own learning (Betts, 1985).

II. Introduction to the Study: Rationale and Methods

This study examines the disparity in access to and participation in more challenging curriculum by ethnicity in North Carolina's public schools. It differs from previous studies in this area because its focus is on student exposure to more demanding courses of study rather than performance on standardized tests. At the high school level (grades 9-12) enrollment in Advanced Placement (AP) courses, specifically Biology, English, Calculus, and History, and in Honors courses, specifically Biology, English, and History (Calculus generally is not offered as an Honors course) is addressed. At the middle school level (grades 6-8), enrollment in Honors courses or participation in an Advanced and Intellectually Gifted (AIG) program is addressed. At the elementary level (grades K-5), the focus is on enrollment in an AIG program.

The ethnic groups subject to underrepresentation in AP courses, Honors courses, and AIG programs in North Carolina are Black, Hispanic and American Indian students. In what follows, these are the three groups of students who will be referred to as "minorities." While the presence of Hispanic students in North Carolina schools has increased rapidly in recent years, the vast majority of minority students in the state are Black. Indeed, Black students constitute over 30 percent of North Carolina's public school population. Asian American students are not included because they are not subject to underrepresentation in more challenging courses of study relative to their presence in the overall school-age population.

Rationale

The College Board (2000) reports that 1,752 Black students took at least one AP course in North Carolina out of a total of 21,871 AP students, a mere 7 percent. Black students, however, comprise approximately 30 percent of the total school age population. Why does this matter? First, as George and Harrison (2001) observe,

> *High school and college outcomes seem to be strongly related to high school curricula. A special report of Issues on Higher Education (Burdman, 2000) examined data from 21 colleges and reported that students who had taken an advanced placement (AP) course in high school significantly outperformed students who had not taken the AP course but had the college-level prerequisite course.*

Second, Hallinan and Sorenson (1977) contend that achievement test performance is driven, at least in part, by exposure to a curriculum that best prepares students to be successful on such tests. Closing the racial gap in participation in challenging curricula may constitute an important mechanism for closing the ethnic gap on achievement test scores. This idea is supported in part by the number of exceptionally high test scores obtained by AIG students on state tests (Figures 2 & 3).

Additional support is evident from the early results from the Annenberg Challenge Schools in Chicago where a network of 45 schools are "promot[ing] more ambitious intellectual work for all students." The more challenging curricula is associated with improved student performance on the Iowa Test of Basic Skills (Bryk, Nagakoa, & Newmann, 2000). It is

important to note, however, that despite high overall scores, the achievement test score gap that is seen statewide in North Carolina between all students of different ethnic backgrounds is also evident among AIG students.

Figure 2: EOG Reading Performance of AIG Students by Ethnicity 1999-2000 School Year, Grades 3-8

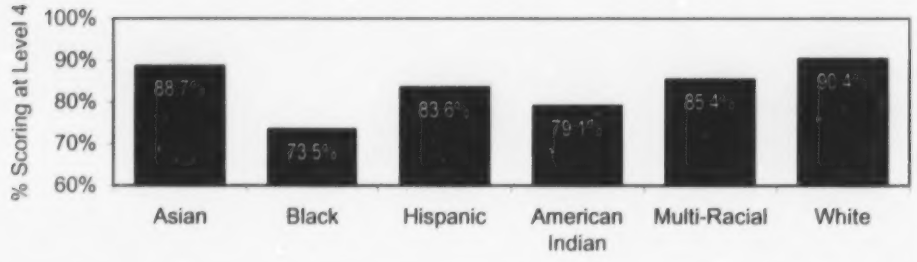
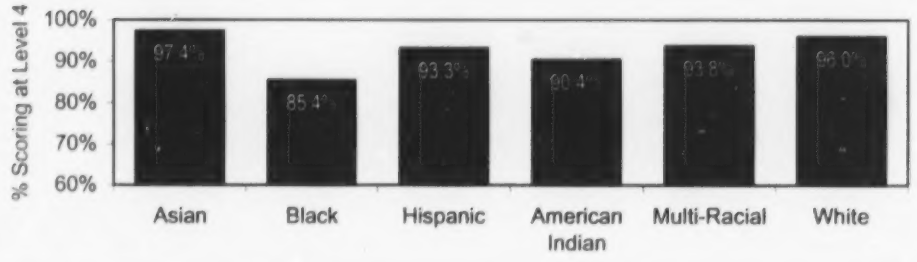


Figure 3: EOG Mathematics Performance of AIG Students by Ethnicity 1999-2000 School Year, Grades 3-8



Third, a low minority presence in more demanding courses of study leaves the impression among both students and parents alike that those courses and programs are exclusively the domain of non-minority students. This can only make it more difficult to encourage minority students to participate in more challenging curriculum opportunities in schools and school districts that make the commitment to change the traditional demography of AP, Honors, and AIG courses and programs.

Methods

To conduct this study two major sources of data were used. First, data collected directly from all of the state's public schools by the North Carolina Department of Public Instruction

(DPI) on an annual basis. Most of the data obtained from DPI pertained to the 1999-2000 academic year. The DPI data are used in the quantitative aspects of the study that provide a general picture of the situation across the state.

Second, with the assistance of DPI staff, two surveys were designed to facilitate the collection of additional information that is unavailable in DPI databases. One survey addressed AIG programs at the elementary and middle school level and the other addressed advanced curriculum offerings at the high school level. Surveys and self-addressed stamped envelopes were mailed to all public schools, including charter schools, in the state. Each survey included a letter from the DPI describing the study and the purpose of the study. It was requested that the surveys be completed by principals, guidance counselors, or other knowledgeable staff (as designated by the school principal).

A total of 1,850 middle and elementary school surveys and 450 high school surveys were mailed out in mid-December. Eight hundred and sixty-six (47%) completed elementary and middle schools surveys and 231 completed high school surveys (52%) were returned to us.

In the high school survey, questions were asked about advanced curriculum offerings (types of courses offered, how many, limits on the numbers of courses that could be offered), screening and placement decisions (criteria used to place students, self-selection into courses, reasons students decline placement) and regular instructional programs. The elementary/middle school survey asked about programs for AIG students (e.g., Honors courses offered, the structure of the school's AIG program, etc.) and about the screening, identification and placement process for those programs.

There are both quantitative and qualitative dimensions to this study. The quantitative dimension, for the most part, tries to identify statewide patterns that might influence minority underrepresentation in more demanding courses. The qualitative dimension involves intensive site visits to a limited number of schools where interviews were conducted with students, parents, teachers, counselors, and principals to isolate the factors "on the ground" that might affect minority access to and participation in more challenging curricula.

A total of 11 schools (6 high schools, 2 middle schools, 3 elementary schools) were selected for these site visits. These schools were chosen from among those schools that returned surveys. High schools were selected based on information gathered from survey data as well as extant state data. Using data from DPI databases, it was established that English, Calculus, History and Biology were the AP courses high schools were most likely to offer (Table 1). Having identified those courses, the minority presence of students in those courses was examined school by school. From those data, three high schools were selected where the minority representation in these courses was equal to or greater than the percent minority in the school, and three other high schools were selected where the minority representation was considerably less than the percent minority in the school. For the selection of elementary and middle schools, the information on the racial composition of AIG programs collected from the school surveys was used. In this case, schools were selected based on the minority representation in AIG programs relative to the minority representation in the schools' overall populations.

The remainder of this report is structured as follows. Section III provides a review of the major theories about potential causes of the ethnic disparity in enrollment in challenging courses and programs. Section IV documents the extent and nature of these disparities in the North Carolina public schools as well as the availability of AP and Honors courses in different types of schools. Section V presents the results of analyses looking at school characteristics that are associated with larger (or smaller) ethnic disparities in enrollment in challenging courses and programs. Sections VI and VII summarize the results of the survey data collected from the schools about the services provided to students in advanced classes and programs. Section VIII reports on the results gleaned from the interviews and observations conducted during the aforementioned case study visits to selected high schools, middle schools and elementary schools. Section IX presents some examples of promising practices from districts and schools around the state. Section X provides a list of recommendations for eliminating ethnic disparities in enrollment in challenging courses and programs based on both the prior research cited in this document as well as the analyses conducted using North Carolina data.

III. Literature Review: What Causes the Enrollment Gap?

What explanations have been offered as causes of the underrepresentation of minority students in more demanding courses of study?. In undertaking this study five major hypotheses that are commonly discussed as explanations for the ethnic disparity in academic performance are utilized. These are:

- The "Acting White" Hypothesis,
- The "Selection Mechanism" Hypothesis,
- The Learning Opportunities Hypothesis,
- The Teacher Expectations Hypothesis, and
- The Socioeconomic Status Hypothesis.

These five hypotheses are not necessarily mutually exclusive. The objective is to assess these hypotheses with the intent of identifying a set of interventions that will close the enrollment gap. This section of the report has benefited greatly from reports prepared by researchers with extensive knowledge of the racial/ethnic attainment gap at the elementary (Howells, 2001), middle school (George & Harrison, 2001), and high school (Jackson, 2001) levels.

"Acting White" Hypothesis

The first hypothesis which has major currency is attributed to anthropologists Fordham and Ogbu (1986). It centers on the role of peer effects on Black student performance specifically. Black students are seen as "disidentifying" with school achievement because of the fear of being described as "acting White" by their Black peers. Hence, doing well in school becomes something that only White students are expected to do, and a student's cultural authenticity as a Black person is called in question if it is learned that s/he is striving for high grades. Black youth culture is seen as oppositional toward standard norms of success, and the opposition toward school success is viewed as a critical manifestation.

In a nuanced critique of the Fordham-Ogbu position, Karolyn Tyson's ethnographic research in two all-Black elementary schools in the Southeast shows that the Black third and fourth graders that she studied highly valued school success. The students who were struggling academically admired their higher achieving peers and desired higher achievement for themselves. Only those who felt that high achievement was not in their future were beginning to show clear signs of school disengagement. Another study by Cook and Ludwig (1997) using data from the National Education Longitudinal Study (NELS:88) also demonstrated that there is little discrepancy between Black and White students in the valuation of academic success.

Given Tyson's findings in particular, three major questions must be raised about the "acting White" hypothesis. First, when and why does peer pressure not to achieve among Black students become strong if it is not present in fourth grade? Second, is the "acting White" effect present for Black students as early as fourth grade in schools with a significant presence of non-Black students? Third, does the "acting White" effect, given the general peer pressure among

adolescents that opposes academic achievement, have additional force and pervasiveness for Black students? After all, White students fear being labeled "geeks" or "nerds." James Coleman's (1961) ethnographic study of ten high schools in Illinois predominantly consisting of White students, identified a "social climate" where academic achievement was belittled as curve busting, and the heroes in the schools were the athletes and the cheerleaders. A more recent study of 20,000 teenagers in communities in California and Wisconsin found that adolescent peer culture in general "demeans academic success and scorns students who try to do well in school" (Steinberg 1992, p. 19). Therefore, the issue of whether "acting White" disproportionately affects minority students' decisions to enroll in higher-level courses (and/or their performance on measures that would qualify them for high-level courses and programs) remains unclear at best.

"Selection Mechanism" Hypothesis

Disproportionately low placement of minority students, especially at the elementary and middle school levels, in more challenging curricula may also stem from the procedures used to identify students as gifted or as eligible for high-level courses. Excessive reliance on standardized test scores may narrow the range of students considered for placement, particularly in schools where rigid cut off scores are employed as a means of selection. Some educators (Erb, Gibson, & Aubin, 1995; Reis & Renzulli, 1986) have argued for a more expanded identification process including (1) psychometric information from various sources (e.g., creativity and achievement tests as well as IQ tests, etc.), (2) developmental information from teachers, parents, and the student (via rating scales, personal narratives, and/or teacher recommendations), (3) sociometric information (i.e., peer nominations or peer ratings), and (4) academic performance information such as grades and accomplishments in school and non-school settings (George & Jackson, 2001). Ron Howells' (2001) report on steps taken in Palm Beach County, Florida to increase the presence of minority students in AIG programs also stresses the importance of diversification of instruments used for AIG identification.

As George and Jackson (2001) observe, since 1997 DPI has, through a new set of policy recommendations, encouraged schools "to minimize the role of psychometric information in the identification of students for placement in Academically and Intellectually Gifted (AIG) programs...." (p. 19). Since this initiative is only three years old, the full effects of its implementation are yet to be seen. Schools are still in the process of designing and/or implementing new guidelines for AIG identification. However, George and Jackson also express concern that there already are indications of very wide differences in how "minimized" the role of psychometric information has become across schools. Moreover, they add:

> *Almost everyone we spoke to for this report said that the 1997 guidelines and the reconfiguration of services to gifted students in North Carolina have resulted in more access (and the perception of more access) to gifted programs for minority students. But they also report that traditional practices "die hard." In some schools EOG test scores still provide the definitive cut scores for access. Several principals said their schools still use group IQ tests as part of their AIG formula* (p. 19).

Indeed, George and Jackson (2001) express the concern that "when a school's AIG formula for identification considers a bevy of other developmental, sociometric and performance factors, if test cut scores are used, these scores become definitive and carry too much weight" (p. 19). They also note that, "Middle school teachers [report] that even though EOG test scores often underestimate their minority students' capabilities, they typically carry more weight in the AIG placement decisions than the students' performance or their [the teacher's] recommendations" (p. 19).

Learning Opportunities Hypothesis

This hypothesis is derived from the work of Hallinan and Sorenson on the interaction between opportunities to learn, effort, and ability. They conceive of test score performance as being driven by accumulated skills and knowledge (human capital), and of the acquisition of this human capital as a process. This process involves a mixture of both ability and motivation (psychological capital). They argue that regardless of how capable and hard-working individuals might be, they will not be successful in accumulating human capital without opportunities to learn.

To the extent that opportunities to learn are structured by schooling, then the path of coursework a student takes will sharply influence their human capital accumulation. Knowledge acquired is cumulative. It is not possible to take a Calculus class without having taken algebra beforehand or to take algebra without having had the requisite pre-algebra material. Indeed, with respect to standardized tests, evidence indicates that the more math and the more foreign language a student has taken, the better they will do on the SAT (Eddy, 1981; Morgan, 1989).

This hypothesis would suggest that apart from fear of "acting White", minority students may do worse on standardized tests because they simply have not been exposed to the curriculum that would best prepare them to be successful on the tests. George and Jackson (2001) observe specifically in the North Carolina context that:

> *Some educators argue that the heavy weight of test scores in the identification process assumes that all students have been exposed to similar curricula. But for many, the EOG test does not match the curriculum [taught] and/or the North Carolina Standard Course of Study has not been followed or taught well* (p. 19-20).

Teacher Expectations Hypothesis

The teacher expectations hypothesis places the onus squarely on teacher behavior and practices. Here the argument takes the form of a negative self-fulfilling prophecy. Teachers have beliefs about students' abilities that correlate with ethnicity (Ferguson, 1998). If they believe Black students, for example, are generally less able for biological or sociological reasons, they will expect less of them, push them less, and steer them away from tougher courses. Here one can find potential explanations for the mechanisms that lead these students to "disidentify" with schooling and school achievement, as well as a potential explanation for Black students not taking the courses that will enable them to perform better on standardized tests.

AIG teachers may fear inclusion of more minority students in their program because of negative expectations about their behavior. On the other hand, George and Jackson (2001) even identify instances where teachers "under-nominate" minority students for AIG in schools with pull-out programs because the students are well-behaved and good leaders in the classrooms. The teachers do not want to lose these students and risk disrupting a preferred classroom dynamic. They also observe even more reluctance to nominate students for AIG at the middle school level than at the elementary level. Teachers often wonder why the student was not already identified as AIG eligible in 3rd grade with their peers; they ask why wasn't the "giftedness" noticed before. This might lead teachers to assume that these students may not truly be "AIG material"; otherwise they would have been identified earlier.

Socioeconomic Status Hypothesis

Socioeconomic factors have been shown to have a powerful impact on children and families. In general, youth who live in poverty are more likely to experience socioemotional, behavioral, academic, and health difficulties (McLoyd, 1990; 1998). Moreover, research has shown that economic conditions can influence children both directly through the resources that economic conditions afford, and indirectly by causing parental distress and consequently impaired parenting (e.g., Conger, et al., 1992; Elder, 1974; Gutman & Eccles, 1999; McLoyd, 1990; 1998).

For example, low SES has been associated with lower academic achievement for youth (e.g., Conger, Conger, & Elder, 1997; White, 1982). In a meta-analysis of almost 200 studies, White (1982) reported that income was the "highest single correlate" of traditional measures of SES to be related to academic achievement. However, a much stronger association was found between the home atmosphere and achievement than between achievement and any single or combined measure of socioeconomic status. This pattern suggests that the family environment may mediate the role that socioeconomic factors play in youth achievement. In fact, preliminary research has supported this hypothesis (e.g., Duncan, Brooks-Gunn, & Klebanov, 1994; Lee & Croninger, 1994). For example, researchers examining a national sample of eight grade adolescents reported that family variables, such as literacy resources in the home, discussion of school matters, and maternal educational expectations, reduced the impact of poverty on youth reading achievement by more than half (Lee & Croninger, 1994).

Ron Howells' (2001) report places great emphasis on the higher incidence of poverty and low income among Black families as a major factor that resulted in gross under-identification of Black children in AIG programs in Palm Beach County, Florida. To change conditions requires finding talent among students who may not present their talent in the same ways as students from middle or upper class backgrounds. However, class does not wholly trump race in importance. Although the representation of middle class minority students in AIG programs was higher in Palm Beach County than that of students from poor families, middle class status did not provide insulation from racial underrepresentation. Howells (2001, Addendum, emphases added) writes:

> *While the representation of minority students in gifted programs was very low [in Palm Beach County], minority students from middle class families had a better*

chance of being identified. The vast majority of minority students enrolled in gifted programs came from families of teachers, those in the medical and legal professions and families who owned small businesses. These parents were aware of the existence of gifted programs and took advantage of the opportunity for their children. These families were financially able to have their child's I.Q. assessed by psychologists in private practice which is permitted under Florida law. However, many middle class minority families chose not to pursue having their children tests for gifted placement. Many expressed the feeling that the gifted program was "elitist" and having their child labeled as gifted was not a status symbol as it was for many White families.

A final point which helps to explain the low representation of middle class minority students in gifted programs in instances such as this relates to the previously-discussed issue of teacher expectations. Shade, Kelly and Oberg (1997) conclude that since there is less information available on higher SES minority families there is a tendency for educators and policy makers to draw erroneous generalizations that lead to lowered expectations that justify low teacher expectations for all minority students.

IV. The Enrollment Gap and The Availability of Advanced Curricula

To document the extent of minority underrepresentation in North Carolina's public schools in AP, Honors, and AIG curricula, the presence of minority students in such curricula was compared to their presence in the general student body. The assumption is, in the absence of group-linked inequities, that the proportion of Black, Hispanic and American Indian students represented in AP, Honors, and AIG curricula should match their proportion in the overall student body. If the proportion in these programs and classes is lower, especially if it is markedly lower, that is an indicator of precisely the type of disparity that must be addressed.

The *Disparity Index* is also introduced as a summary statistic to capture the magnitude of this gap. The Disparity Index is defined as the ratio of the percentage of minority students in advanced courses or programs to the percentage of minority students enrolled in the school. For example, if 40 percent of the students at John Doe High School are Black, Hispanic, or American Indian, but only 10 percent of the students enrolled in AP English are from those three ethnic groups, then the Disparity Index for that course would be 0.25 (10 divided by 40), indicating substantial underrepresentation of minority students in AP English in that school.

The lowest possible value of the Disparity Index is zero, a case where there is no minority participation in the advanced course of study in question. Parity is represented by a Disparity Index score of one. Schools with scores greater than one are those where the percentage of minority students in an advanced course of study actually exceeds their percentage in the school (i.e., a case of overrepresentation).

Current Status of the Enrollment Gap

Table 1 provides evidence on the magnitude of the enrollment gap on a statewide basis using DPI data for 1999-2000. The first two columns, percent minority in course and percent minority in school, are the average values in each category for all schools that offer courses or programs of each type. The third column is the statewide Disparity Index score for the category, computed as the entry in the first column divided by the entry in the second column. The rightmost column of the table indicates the total number and percentage of schools that offer a course or program of each type.

Minority students at the high school level are significantly underrepresented statewide in all four types of AP courses included in the analysis. Underrepresentation is not quite as severe in high school Honors courses. However, Honors courses are not subject to the standardization required of AP courses (which are governed by the College Board and involve the option of the student taking a national examination at the end of the course), nor are they generally viewed as possessing the same level of rigor. Still, substantial underrepresentation of minority students occurs in those courses as well.

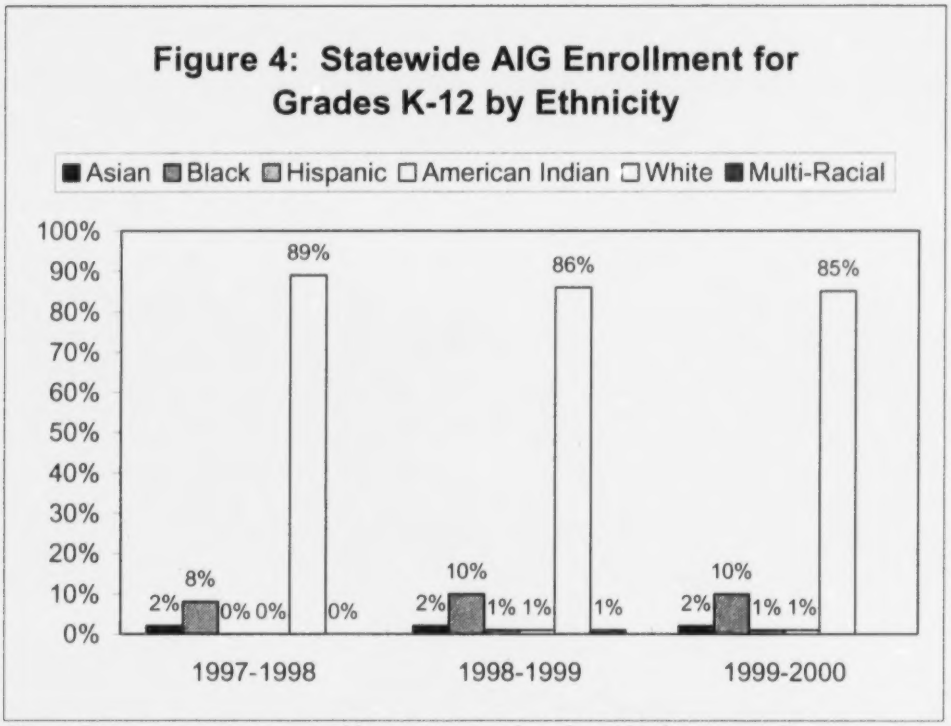
Substantial underrepresentation also is evident in the more challenging curricular offerings in the earlier grades, both middle school and elementary school. At the elementary

school level, minority students are typically AIG-identified at less than half the rate of their presence in the general school population (Table 1 and Figure 4).

Table 1: Minority Presence in Advanced Curricula: 1999-2000 School Year

Grades 9-12 Course	Average Percent Minority Enrolled in Course	Average Percent Minority in School Population	Disparity Index	Number/ Percent of Schools Offering the Course
AP Biology	12.6	31.4	0.40	190 (45%)
AP English	12.3	31.1	0.40	274 (66%)
AP Calculus	11.8	31.4	0.38	275 (66%)
AP History	12.1	30.3	0.40	241 (58%)
Honors Biology	22.1	34.3	0.64	108 (26%)
Honors English	20.6	32.9	0.63	310 (74%)
Honors History	21.2	33.6	0.63	245 (59%)
Grades 6-8 Honors/AIG Classes[a]				
Language Arts	19.5	36.8	0.53	153
Math	19.9	35.7	0.56	103
Grades K-5 AIG Classes[a]				
Language Arts	16.6	38.3	0.43	100
Math	14.6	37.8	0.39	75
Combined Language Arts/Math	17.9	34.7	0.52	89

[a] The data for elementary and middle schools do not include self-contained AIG programs (i.e., programs where AIG students are separated from the other students in the school all day long for instruction). Therefore, these data represent a small subset of the elementary and middle schools in the state.



Note: Some percentages may add up to more or less than 100 due to rounding.

Distribution of Schools Across the Range of Disparity Index Scores

Table 2 is even more revealing about the magnitude of the problem at the high school level. In Table 2, for each course or program, the number of schools falling within 20-point intervals on the Disparity Index is presented. The lowest interval, scores between 0.00 and 0.20, represent the range of schools where minority students have no representation in advanced curricula to schools where their presence in those courses or programs is only one-fifth of their presence in their school's overall student body.

Table 2: Distribution of Disparity Index Scores By Advanced Course or Program

AP Biology (Grades 9-12)

Disparity Index Interval	Number of Schools	Percent of Schools	Cumulative Percent
0.00-0.20	85	44.7%	44.7%
0.21-0.40	44	23.2%	67.9%
0.41-0.60	19	10.0%	77.9%
0.61-0.80	16	8.4%	86.3%
0.81-1.00	10	5.3%	91.6%
> 1.00	16	8.4%	100%
Total	190	100%	

AP English (Grades 9-12)

Disparity Index Interval	Number of Schools	Percent of Schools	Cumulative Percent
0.00-0.20	114	41.6%	41.6%
0.21-0.40	63	23.0%	64.6%
0.41-0.60	44	16.1%	80.7%
0.61-0.80	18	6.6%	87.2%
0.81-1.00	6	5.8%	93.1%
> 1.00	19	6.9%	100.0%
Total	**274**	**100%**	

AP Calculus (Grades 9-12)

Disparity Index Interval	Number of Schools	Percent of Schools	Cumulative Percent
0.00-0.20	136	49.5%	49.5%
0.21-0.40	54	19.6%	69.1%
0.41-0.60	35	12.7%	81.8%
0.61-0.80	20	7.3%	89.1%
0.81-1.00	11	4.0%	93.1%
> 100.0	19	6.9%	100%
Total	**275**	**100%**	

AP History (Grades 9-12)

Disparity Index Interval	Number of Schools	Percent of Schools	Cumulative Percent
0.00-0.20	106	44.0%	44.0%
0.21-0.40	59	24.5%	68.5%
0.41-0.60	37	15.4%	83.8%
0.61-0.80	19	7.9%	91.7%
0.81-1.00	10	4.1%	95.9%
> 1.00	10	4.1%	100%
Total	**241**	**100%**	

Honors Biology (Grades 9-12)

Disparity Index Interval	Number of Schools	Percent of Schools	Cumulative Percent
0.00-0.20	20	18.5%	18.5%
0.21-0.40	17	15.7%	34.3%
0.41-0.60	24	22.2%	56.5%
0.61-0.80	16	14.8%	71.3%
0.81-1.00	8	7.4%	78.7%
> 1.00	23	21.3%	100%
Total	**108**	**100%**	

Honors English (Grades 9-12)

Disparity Index Interval	Number of Schools	Percent of Schools	Cumulative Percent
0.00-0.20	42	13.5%	13.5%
0.21-0.40	67	21.6%	35.2%
0.41-0.60	79	25.5%	60.6%
0.61-0.80	57	18.4%	79.0%
0.81-1.00	46	14.8%	93.9%
> 1.00	19	6.1%	100%
Total	**310**	**100%**	

Honors History (Grades 9-12)

Disparity Index Interval	Number of Schools	Percent of Schools	Cumulative Percent
0.00-0.20	24	9.8%	9.8%
0.21-0.40	52	21.2%	31.0%
0.41-0.60	74	30.2%	61.2%
0.61-0.80	57	23.3%	84.5%
0.81-1.00	28	11.4%	95.9%
> 1.00	10	4.1%	100%
Total	**245**	**100%**	

For all four AP courses examined, more than 40 percent of the schools in the state offering the courses fall into this lowest category; for AP Calculus, half of the high schools in the state offering the course are in this category of extreme underrepresentation. Less than 15 percent of the schools offering AP courses have minority enrollments at or above 80 percent of minority students' presence in the school population. For AP History it is less than 10 percent of the state's high schools. While matters look better for Honors courses at the high school level, more than one-third of the schools offering Honors courses still have Disparity Index scores of 0.40 or less. These are schools where minority students enroll in Honors courses at a rate less than half their presence in the general student body.

Frequently, the absence of minority students in advanced curricula is pervasive across a district. A few examples illustrate this phenomenon:

- One mountain school district has four elementary schools and middle schools, each with comparatively low minority enrollment (the minority presence in the four schools' student bodies ranges from slightly less than 1 percent to close to 6 percent). But in none of the four schools was a single minority child AIG identified at either the elementary or middle school level.

- On the other hand, one large urban district has 36 elementary schools, typically with a 30-40 percent minority enrollment. In only four of the schools are minority children AIG identified in proportions consistent with their presence in the school. Eleven of the schools fall in the 0.00 to 0.20 Disparity Index range. More than half score below 0.40 on the Disparity Index.

- One western suburban county has 12 elementary schools. In seven of them, each with a 20-30 percent minority enrollment, not one minority child was AIG-identified in 1999-2000.

In light of these data, one might contend that very low minority representation in advanced curricula in a particular school may be a function of very low minority presence in that school. In other words, schools that have few or no minority students in advanced curricula may also be schools where there are very few minority students in attendance. There does appear to

be some relationship in this respect, but only in a few courses and the relationship typically is very small in magnitude (see Section VI and Appendix A for details on these results). Therefore, in most cases, this is an unlikely explanation for low Disparity Index scores.

In-Field Licensing of High School AP Teachers

At the secondary level, one indicator of the quality of AP offerings and student access to that quality is indicated by the proportion of teachers who are engaged in instruction in fields in which they are licensed. If certain types of schools have more out-of-field teachers assigned to AP courses, that may have implications for the relative quality of instruction that the AP students in those schools receive. Utilizing the state's DPI data base, it was determined that during the 1999-2000 school year, over 80 percent of the state's high schools had all of their AP courses taught by teachers who are licensed in the field that is the subject matter of the course. However, there are some geographic and demographic differences in how these schools are distributed.

Geographic Differences. **There is significant regional variation within the state in the distribution of in-field AP teachers.** Rural schools actually have the highest percentage of schools with all AP courses taught by faculty in their field, with the percentages for suburban and urban schools being somewhat lower (Table 3). On the other hand, urban and suburban schools tend to offer more different types of AP courses than rural schools (Table 5), which may contribute to greater difficulty in staffing all of those classes with in-field teachers.

Table 3. High Schools with AP Teachers In and Out of Field By Region

	All AP Teachers Teaching In-Field	At Least 1 AP Teacher Teaching Out-of-Field	Total
Urban	52 (68.4%)	24 (31.6%)	76 (100.0%)
Suburban	50 (74.6%)	17 (25.4%)	67 (100.0%)
Rural	141 (88.7%)	18 (11.3%)	159 (100.0%)
Total	**243 (80.5%)**	59 (19.5%)	**302 (100.0%)**

Student Characteristics. While there is no significant difference between the socioeconomic status of student populations (based upon the proportion of students receiving free or reduced price lunches) of schools with all AP teachers in field and those with at least one out of field, there is a significant difference associated with the percentage of minority students in the school. Schools with all AP courses taught by in-field teachers are, on average, 30 percent minority, while schools with at least one AP course taught by a teacher out-of-field have an average of 36.5 percent minority presence. This difference, however, may be confounded with geography. Urban schools have the highest mean minority presence of the three categories of schools (40 percent versus 23 percent in suburban schools and 32 percent in rural schools), but the lowest percentage of schools with all AP teachers in a field in which they are licensed. **Therefore, urban schools and schools with higher concentrations of minority students are somewhat less likely to have all of their AP courses staffed by in-field teachers.**

High School AP Course Offerings

Another school-based indicator of the quality of and access to advanced curricula is the number of different AP courses that are available to students in each school. If certain types of schools offer fewer AP courses, then the students in those schools will not have access to the same opportunities to learn as other students, all other things being equal.

Among high schools offering AP courses, the mean number of unique AP courses offered in North Carolina high schools is 5.55. In addition, there are a relatively small number of schools offering ten or more unique courses (Table 4). Half of the high schools in the state that offer AP courses offer four or fewer unique courses.

Table 4. Total Number of AP Courses Offered Per High School

Number of Courses Offered	Number of Schools	Percent of Schools
1	16	5.2%
2	28	9.1%
3	45	14.7%
4	66	21.5%
5	38	12.4%
6	33	10.7%
7	19	6.2%
8	13	4.2%
9	8	2.6%
10	7	2.3%
11	8	2.6%
12	9	2.9%
13	2	0.7%
14	2	0.7%
15	5	1.6%
16	3	1.0%
17	3	1.0%
18	2	.7%
Total	**307**	**100%**

Twenty-nine percent (87 schools out of 301 that offered AP courses during 1999-2000) of the state's high schools offer one to three unique AP courses, 63 percent (188 schools out of 301) offer 4-5 AP courses, and the remaining 37 percent (113 schools out of 301) offer 6 or more. As was true for AP teacher qualifications, the number of AP course offerings also varies according to geographic and demographic characteristics of schools.

Geographic Differences. As shown in Table 5, **suburban and urban schools tend to offer more AP courses than schools in rural areas.** Urban high schools that offer AP courses offer, on average, more than twice as many different courses as rural high schools. Variation in the diversity of unique AP offerings by location of high school is described in more detail in Table 6. These data reinforce the finding that urban schools offer the greatest array of AP courses, and rural schools offer the fewest. For the 14 AP courses in Table 6, the proportion of urban schools offering the course significantly exceeds suburban and rural schools in all instances except Calculus, Statistics, and Government. With respect to AP Calculus, a slightly higher proportion of suburban schools (96 percent) offer the class than urban schools (93 percent); with respect to AP Statistics and AP Government, the proportions of urban and suburban schools offering the course are similar. AP English, Calculus, and History are offered by almost every urban high school that offers AP courses.

Table 5. Average Number of AP Courses Offered By Geographic Region

	Number of Schools	Mean Number of AP Courses Offered
Urban	76	8.48
Suburban	67	6.12
Rural	159	3.90

Table 6. Frequency of Specific Types of AP Courses By Geographic Region

	Percent of Schools Offering the Course			
Type of AP Course	**Urban**	**Suburban**	**Rural**	**Total**
English	98.7%	94.0%	84.9%	91.7%
Calculus	93.4%	95.5%	86.2%	91.4%
History	94.7%	86.6%	67.9%	80.5%
Biology	75.0%	71.6%	54.1%	63.6%
Chemistry	63.2%	49.3%	27.0%	41.7%
Physics	56.6%	28.4%	13.8%	28.1%
Foreign Language	57.9%	26.9%	10.1%	25.8%
Statistics	38.2%	37.3%	12.6%	24.8%
Art/Art History	43.4%	25.4%	9.4%	21.9%
Government	23.7%	23.9%	7.5%	15.6%
Environmental Science	39.5%	16.4%	2.5%	15.2%
Computer Science	31.6%	10.4%	3.1%	11.9%
Psychology	26.3%	7.5%	4.4%	11.3%
Music	23.7%	11.9%	2.5%	9.9%
Economics	3.9%	1.5%	1.3%	2.0%
Total Number of Schools	**76**	**67**	**159**	**302**

School Characteristics. Other school characteristics also vary significantly among schools with different number of AP offerings. For example:

- **Schools offering more unique AP courses tend to be larger.** Mean enrollment in schools offering 6 or more courses is one and one-half times as high as mean enrollment in schools offering 4-5 courses and twice as high as high schools offering 1-3 courses. (1326 students versus 924 and 682 students, respectively).

- **Schools offering more unique AP courses tend to have a more affluent student body.** On average 31 percent of the students in schools offering 1-3 AP courses received free or reduced fee lunches, while 28 percent of the students in schools offering 4-5 AP courses received free or reduced fee lunches. In contrast, 22 percent of the students in schools offering 6 or more AP courses received free or reduced fee lunches.

- **Schools offering more unique AP courses tend to have slightly higher ABCs performance composite scores.** Schools offering 1-3 courses have a mean score of 59, schools offering 4-5 courses have a mean score of 61, and schools offering 6 or more courses have a mean score of 63.

- **Schools offering more unique AP courses actually have a slightly higher minority presence than schools offering fewer courses.** Thirty-one percent of the students at schools offering 1-3 AP courses are minority while 30 percent are minority at schools offering 4-5 courses. Thirty-four percent of students at schools offering 6 or more AP courses are minority.

The implications of these relationships for the representation of minority students in AP courses might be summarized in the following manner. The minority presence is greatest in urban schools. Urban high schools are larger, and these high schools tend to offer a greater variety of AP courses. Therefore, minority students are generally more likely to be in schools offering a wider range of AP classes, which means that their underrepresentation in AP classes generally cannot be attributed to the lack of class offerings in the schools they typically attend. In addition, these also are the same schools that are most likely to have out-of-field teachers teaching at least one AP class, which brings into question the quality of instruction to which those students are exposed even when they do enroll in those courses.

V. Factors Predicting the Enrollment Gap

In addition to the examination of access to high-level courses reported in the previous section, another important question can be asked that may shed light on the nature of the enrollment gap:

> Regardless of the richness or quality of the advanced curricula offered in a particular school, what factors might influence the magnitude of minority underrepresentation in those more challenging curriculum offerings?

The investigation into this question has proceeded at two levels: a quantitative inquiry focused on school level characteristics and a qualitative inquiry involving school visits and interviews with students, teachers, administrators and parents. This section reports on the quantitative portion of this investigation.

The following analyses explore the extent to which certain school-level factors are associated with lower (i.e., worse) or higher (i.e., better) Disparity Index scores. The factors considered are the following: (1) the school's ABCs performance composite, (2) the percent of the student body receiving free or reduced price lunches, (3) the size of the student body (i.e., average daily membership), and (4) the percentage of enrolled students who are ethnic minorities.

The rationale for inclusion of each of these variables in the statistical analysis is the following:

- The ABCs performance composite is included because high-performing schools might be expected to engender high performance from all of their students, regardless of ethnicity.
- The percent of students receiving free or reduced price lunch is included to capture the socioeconomic status of the student body. While this is a very rough measure of the extent of poverty in a student population, it is the best measure available in state-level data. An elementary school with a more impoverished student body may tend to identify fewer students as AIG eligible because of SES-linked skills that may lead to AIG identification. A high school may have fewer students taking AP or Honors courses because of time demands associated with the need to work outside of school or because lower income students are less likely to have had the earlier courses in middle school that would have prepared them for AP courses in high school.
- Average daily membership is included to allow us to determine whether smaller or larger schools do a better job in including minority students in advanced curricula.
- The percentage of minority students in the school is included to enable us to address whether schools with higher (better) Disparity Index scores simply tend to be schools with more minority students; therefore, if an advanced curriculum is offered, one might hypothesize that minority students might be better represented in those schools simply by chance.

Regression analyses were utilized to assess the relationship between each of these four variables and the Disparity Index based on data from the 1999-2000 school year (detailed statistical results are reported in Appendix A).

High School Analyses

Underrepresentation and Minority Concentration. The results for AP and Honors courses are not especially revealing, but there are a few interesting findings. For AP Biology, AP English and Honors History, there is no relationship between the percentage of minority students in the school and minority presence in AP courses. For AP History, however, the greater the minority presence in the school the greater the minority presence in the course. But for AP Calculus and Honors Biology, the relationship is reversed: minority students are more likely to be better represented in those courses in schools where minorities are less well represented in the general student body.

Underrepresentation and ABCs Results. The only other variable that bears a statistically significant relationship with the Disparity Index is the ABCs performance composite score. Disturbingly, the overall school performance composite score is inversely related to the Disparity Index for three of the four AP courses and all three of the Honors courses at the high school level. **Thus, for AP Calculus, AP English, AP History, Honors Biology, Honors English, and Honors History, the better the high school's overall performance composite, the greater the likelihood minority students were underrepresented in these classes.** These results lead to a critical question: Are some high schools not enrolling minority students in advanced courses out of fear that ABCs performance composites will be lowered? The new ABCs prediction model for determining growth and incentive awards for high schools, however, may help to remove this potential barrier, because it is based on the progress made by individual students.

Underrepresentation and Geographic Location. The same regressions were also performed for each of the four AP courses controlling for geographic location with no substantive change in the findings. It was discovered through these analyses (but only for AP History) that urban and suburban schools tended to have superior Disparity Index scores relative to rural schools. The same regressions were also performed with a reduced sample to insure that the results were not attributable to any effects unduly produced by schools with very small AP or Honors programs. When the sample was limited to high schools with at least 10 students in each of the four AP classes and each of the three Honors classes, there were again no substantive changes in the results. The resulting sample sizes in most of these cases, however, were exceedingly small.

Elementary and Middle School Analyses

Underrepresentation and Minority Concentration. At the middle school level, the only one of the four variables systematically related to the percentage of minority students enrolled in AIG/Honors Language Arts and AIG/Honors Mathematics was the percent of students who are minority in the school. As was found for high school AP History, a larger percentage of

minority students in the school is associated with more minority students enrolled in both of these areas. The same result was found for the elementary AIG curricula as well.

Underrepresentation and ABCs Results. For elementary and middle schools, there is no relationship evident between the school's ABCs performance composite score and the participation of minority students in this particular advanced curriculum. This finding differs from the negative association that was detected at the high school level.

Summary

These analyses are only suggestive but begin to lead toward issues and directions to query. The results suggest that high-minority elementary and middle schools are more likely to include minority students in AIG/advanced courses at a higher rate.

The high school results are mixed, including some discouraging findings on the relationship between enrollment in advanced courses and the ABCs performance composite, and the finding of an inverse relationship for selected advanced courses between the percent minority school enrollment and percent minority participation in the advanced course. Clearly, a lot of work needs to be done to raise awareness of school personnel, to encourage students to pursue advanced coursework, and to prepare more minority students at earlier ages for advanced curricula.

VI. Elementary and Middle School AIG Survey Results

Results reported here are from a total of 866 elementary and middle school AIG surveys returned as of February 9, 2001. These 866 survey responses represent 47% of the total number of surveys distributed (Table 9). The elementary/middle school survey asked about programs for AIG students (Honors courses offered, the structure of the school's AIG program, etc.) and about the screening, identification and placement process for those programs.

Table 9. Elementary and Middle Schools Returning Surveys

School Grade Configuration	Number of Schools
Elementary Schools (highest grade level <= 6)	565
Middle Schools (lowest grade level >= 6)	224
Combination (lowest grade < 5 and highest grade >6)	71
Total[a]	**860**

[a] School grade span information was not available for 6 schools.

Programs for Students Identified as Academically or Intellectually Gifted (AIG)

Honors Courses. As shown in Table 9, two hundred and ninety-five schools contained middle school grade levels. Forty-five percent of schools with middle grades reported offering Honors courses. Because the terminology used to classify advanced courses differ across middle schools (e.g., accelerated, Honors, AP, etc.) and because the survey asked only about "Honors" courses, this figure may underestimate the number of middle schools in the sample offering advanced courses. However, "Honors" is the most commonly used term. Two-thirds of these schools reported offering 1 or 2 Honors courses, which is largely consistent with the results generated from DPI databases in Table 7. Math courses, especially Algebra, were the most commonly offered courses. Language Arts was the only other class offered by a significant number of middle schools (55). Almost all schools offering Honors courses do so at the 8th grade (97%); although many also offer Honors courses in the 6th (62%) and 7th (76%) grades.

AIG Program Structures. Schools are most likely to structure AIG programs using a resource room (51%) and/or a heterogeneously-grouped classroom (49%). A significant number of schools reported using other methods of organizing AIG programs, including some form of clustering and or enrichment. These responses seem to reflect a trend toward multiple levels or types of services.

AIG Screening. Across schools, the most commonly used screening instrument is End of Grade tests, followed by the Test of Cognitive Skills and the Cognitive Abilities Test (Table 10). Teacher's impressions of students are also an important part of the identification process; some form of teacher-completed checklist was among the top screening instruments cited.

Many schools reported using multiple instruments to screen students for AIG identification. The data indicate that there is a statistically significant positive relationship between the number of instruments used to screen for AIG identification and the number of students overall enrolled in a school's AIG program, but only at the elementary level - the more instruments used, the more AIG students enrolled. This relationship does not hold for middle schools. Interestingly, the number of **minority** students enrolled in AIG does **not** increase with the number of instruments used for screening in middle schools.

Table 10. Instruments used for the Screening Process

Instrument	Number of Schools	Percent of Schools
End of Grade Test	440	51%
Test of Cognitive Skills (TCS)	219	25%
Cognitive Abilities Test (CogAT)	208	24%
Teacher Checklist	142	16%
Otis Lennon (OLSAT)	103	12%

AIG Identification and Placement. In addition to a variety of assessment data, many schools also reported using other non-assessment criteria for AIG identification. The most common of these were teacher recommendation, grades and student self-selection (including parent request). Of the schools using grades as a criterion for identification and placement, 55 percent require A's and B's, and 36 percent require A's. Ninety-one percent of the schools using EOG scores use the percentile score rather than the scale score. Other criteria reportedly used included student motivation and interest (6%), and student interest inventories (3%).

Table 12. Criteria Used for Identification and Placement

Criteria	Number of Schools	Percent of Schools
Teacher recommendation	775	90%
EOG test scores	770	90%
Cognitive/intelligence test	740	86%
Grades	703	81%
Self-selection (including parent request)	573	66%
Student Work portfolio	540	62%
Standardized achievement test	457	53%
Outside or independent assessment/evaluation (by parent request)	391	45%
Other assessment procedures	309	36%
Domain or skill-specific aptitude tests	113	13%

VII. High School Advanced Curricula Survey Results

A survey was sent to 450 high schools in mid-December, and 231 (52%) were returned. This survey asked questions related to advanced curriculum offerings (types of courses offered, how many, limits on courses), screening and placement decisions (criteria used to place students, self-selection into courses, reasons students decline placement) and the structure of regular instructional programs. Although course offerings are addressed for the state in Section IV, these results refer specifically to high schools that returned surveys. The results are very similar, providing more confidence that other survey results may be fairly representative of the state as a whole.

High School Advanced Course Offerings

The vast majority of high schools offered Honors, Advanced Placement (AP), and Dual enrollment in college courses (Table 13). Honors courses were the most common courses offered (90% of schools), while 85 percent of schools offered AP courses and 82 percent of schools offered Dual enrollment courses. On the other hand, only 3 percent of schools offered International Baccalaureate (IB) courses.

Table 13: Advanced Courses Offered at 231 Surveyed High Schools

Advanced Courses Offered	Number of Schools Offering	Percent of Schools Offering
Honors	207	90
Advanced Placement	197	85
Dual Enrollment	189	82
International Baccalaureate	7	3

Of the 197 high schools offering AP courses, 194 reported on the number of different AP courses currently offered, not counting multiple sections of the same course (see Table 14). An average of about 7 courses were offered per school, although the number ranged from 0 to 28 courses per school (3 schools reported that they generally offered AP courses, but were not currently doing so). The most common AP courses offered were English, History and Calculus.

Table 14: Most Common AP Courses Offered at 231 Surveyed High Schools

Course Type	Schools Offering One Course in Subject Area	Schools Offering Two Courses in Subject Area
Calculus	147 (75%)	22 (11%)
Biology	134 (68%)	0
English	100 (51%)	72 (37%)
History	99 (50%)	58 (29%)
Chemistry	89 (45%)	0
Physics	53 (27%)	3 (2%)
Language	15 (8%)	29 (15%)

Limits on Courses Offered. Fifty-four schools (23%) reported that there were limits on the type of Honors courses they could offer, while 76 schools faced limits on AP courses (33%) and 74 schools faced limits on Dual Enrollment courses (32%). Of the 108 schools reporting limitations on the advanced courses they could offer, schools reported a wide variety of reasons. The most common were class/school size (12%); number of students or availability of teachers/class periods (11%); or limited resources (9%).

Fifty-two percent of the 108 schools reporting these limitations employed plans or strategies for dealing with these limits. These schools reported using 39 different strategies, with the most common being training teachers (9%), requesting additional teaching positions (7%), and increasing dual enrollment or needs assessments (7%).

Identification, and Placement Decisions for Advanced Curricula

Criteria for Identification and Placement. Reporting schools used a variety of criteria for identifying and placing students in advanced courses (Table 15). The most common criteria were self-selection and teacher recommendation, followed by grades. (Note that these are not mutually exclusive categories - some reported using more than one criterion). Test scores were only used in 36 percent of schools as criteria for identification and placement. Of the 150 schools that reported grades as a criterion, 32 percent made no specification as to the types of grades required, while 28 percent required As and Bs, 17 percent required Bs, and 7 percent required As. Of the 55 schools that reported on the type of test used, 31 percent used EOCs, 24 percent used EOGs, and 13 percent used the PSAT. Many schools reported using a combination of tests.

Self-Selection and Available Supports. Eighty-four percent of schools indicated that self-selection was a criteria for placement into at least one type of advanced course (Table 15). **A majority of schools (57%) reported that students were able to self-select into Honors courses without having met any of the previously identified criteria, with slightly lower percentages for AP courses (48%) and Dual Enrollment courses (42%). Of the schools that allowed students to self-select into at least one type of advanced course without meeting any**

other criteria, 85% reported having some type of support system in place to promote the success of these students. A majority of schools reported some combination of mentoring, tutoring, and related supports (57%), while an additional 25 percent simply reported other types of supports.

Relative Importance of Criteria. Fifty-one percent of the schools reported that the criteria they used for identification and placement carried equal weight in the identification and placement process. Of the 86 schools reporting that the criteria did not carry equal weight (28 schools gave no response), the single criterion carrying the most weight was typically self-selection (34%) or teacher recommendation (15%).

Table 15: Criteria Used by High Schools for Identification and Placement in Advanced Courses

Criteria	Number of Schools	Percent of Schools
Self-Selection	193	84%
Teacher Recommendation	185	80%
Grades	150	65%
Test Scores	84	36%
Other	50	22%
Total number of schools responding	**231**	

Support for Underqualified Students. Only 18 percent of schools reported that they had special programs to prepare and support students who otherwise would not be placed in advanced courses. These 42 schools reported a wide range of programs, including AVID (n=9; see Section IX for a description), advisor/counselor programs (n=4), and tutoring/study sessions (n=3). One school even reported a support group for African-American males.

Students Declining Placement. **Although a majority of high schools report that eligible students occasionally decline placement in Honors (88%) courses, very few report that this happens "often" (5%). Declining placement appears to be more common in AP courses, with 25 percent of schools reporting that it happens "often" or "very often".** In addition, 14 percent of schools report that high school students who have previously been in AIG programs decline placement in advanced courses often or very often. This finding is particularly troubling, since most AIG-identified students would be expected to enroll in advanced courses in high school. Students who are unwilling to work hard appears to be the greatest challenge that schools are facing in terms of getting eligible students to enroll in advanced courses, with various scheduling conflicts also commonly cited (Table 16). When asked about the "type" of students who most often declines placement in advanced courses, a majority of schools (54%) report that there is no general type of student who declines placement.

Table 16. Reasons Students Decline Placement in Advanced Courses

Reason	Percent of Schools Reporting that this occurs "Somewhat" or "Very" Frequently
Student does not want to work hard	77%
Conflicts with other courses	66%
Conflicts with extracurricular activities	59%
Conflicts with outside employment	56%

VIII. Case Studies

For the qualitative aspect of the study a total of 11 schools (6 high schools, 2 middle schools, 3 elementary schools) were selected for a closer analysis of the issues involved in student placement in advanced courses and curricula. Case study schools were chosen from the sample of schools returning surveys. The percentage of minority students enrolled in each school and related advanced courses are provided in Table 17.

Table 17: Characteristics of Case Study Schools

School	% Minority Schoolwide	% Minority AIG Program	% Minority AP Calculus	% Minority AP Biology	% Minority AP English	% Minority AP History	% Minority Honors Biology	% Minority Honors English	% Minority Honors History
High School A	91%		68%	73%	68%	70%		87%	90%
High School B	15%			25%	22%			3%	0%
High School C	61%		17%	15%	0%			28%	31%
High School D	40%		0%	0%	9%	6%		6%	12%
High School E	69%		75%		50%	38%		57%	50%
High School F	28%		40%		8%	5%	24%	14%	12%
Middle School J	51%	9%							
Middle School K	13%	11%							
Elem. School G	89%	44%							
Elem. School H	74%	0%							
Elem. School I	38%	29%							

Note. Blank cells indicate that the course/program is not offered at that school.

Identification of Schools. High schools were selected based on information gathered from both survey data and extant state data. From those data, schools with minority representation in either AP Calculus or AP Biology equal to or greater than the percent minority in the school were selected. Some schools where the minority representation was considerably less than the percent minority in the school were also selected. In each case, schools were selected at the extremes on these indicators. For the selection of elementary and middle schools, information on racial composition of AIG programs collected from the school surveys were used. Here, too, schools at the extremes were selected based on representation of minority students in the AIG program relative to their presence in the school. Once all 11 schools were identified, officials from DPI contacted each school's central office to request permission to visit each

school. If consent was given, someone from that office subsequently contacted the school to notify them of the visit from the case study team.

Data Collection. Case studies entailed one-day visits to each school for individual interviews with students, teachers, principals, and counselors. Team members also collected any available documents on selected programs (e.g., AIG, STAR, etc.), student handbooks, and course selection guides for additional analyses. Prior to the visits, the teams also requested that school personnel select a mix of sixteen students based on ethnic background and placement (e.g., AIG and non-AIG, AP and non-AP) for interviews. The degree to which this number and mixture were obtained varied by school. A total of 125 students were interviewed. Information on the number, race, gender, and instructional placement of the students interviewed at each school is provided in Table 18. In the remainder of this section of the report, findings from the on-site interviews are discussed in the context of each of the five hypotheses discussed in Section II that have been advanced to explain the racial/ethnic achievement gap.

Table 18. Characteristics of Interviewed Students

School	Total	Ethnicity					Gender		Placement[a]
		Black	White	Hispanic	Am Indian	Asian	F	M	
High School A	10	9	0	0	0	1	5	5	2 IB, 5 AP, 2 H
High School B	14	4	9	0	0	1	9	5	3 AP, 6 H, 2 CP
High School C	13	8	4	0	0	1	8	5	6 AP, 6 H
High School D	6	2	4	0	0	0	4	2	4 AP, 2 H
High School E	3	1	2	0	0	0	3	0	1 AP
High School F	14	6	5	2	1	0	8	6	9 AP, 2 H
Elem. School G	15	5	10	0	0	0	5	10	11 AIG
Elem. School H	16	9	7	0	0	0	9	7	8 AIG
Elem. School I	10	3	3	3	0	1	5	5	7 AIG
Middle School J	15	8	4	1	0	2	10	5	5 AIG, 4 H
Middle School K	9	1	8	0	0	0	4	5	1 AIG, 4 H
Total	**125**	**56**	**56**	**6**	**1**	**6**	**70**	**55**	

[a] - IB = student enrolled in International Baccalaureate program
AP = student enrolled in Advanced Placement course(s)
H = student enrolled in Honors course(s)
AIG = student enrolled in Academically/Intellectually Gifted program
CP = student enrolled in College Prep course of study
Students enrolled in regular instruction account for the remainder of the placement totals.

Acting White

The "acting White" thesis is currently one of the more popular scholarly explanations for Black students' academic underachievement; yet, with a few exceptions, interviewed students

failed to identify this as a problem. School personnel, however, occasionally offered some variation of the theory to explain the underrepresentation of minority students in advanced curricula. Only at one school, High School D, did the perceptions/explanations of school personnel match the reported experiences of students on this matter. Upon closer examination, though, it appears that underneath the issue of "acting White" and other such ridicule that some Black students encounter lie two major issues: (1) Black students often experience racial isolation in advanced courses and programs, and (2) high-achieving students are often perceived as "stuck up" or thinking they are better than others. These were recurring themes across the interviews, but the second issue, which will be described shortly, crosses racial lines.

In interviews with teachers, principals, and counselors at High School D, a school which had virtually no minority representation in advanced courses (Table 17), interviewees made statements that reflected the notion of "acting White". These statements centered around the following beliefs: that it is not "cool" for minority students to be smart; that minority students lack self-confidence and are afraid of being "the only one" and isolated from friends; that Blacks -males in particular - are "averse to success" because success would be "betraying their brothers;" that Black students "don't place a high value on education;" that Black students are "embarrassed" about their ability, etc. This was the only school at which this theme was so pervasive. In fact, just recently, an assistant principal helped to start a club for high-achieving Black students in an attempt to address the problems these students encounter. According to one counselor, though, whose own daughter attended the school, the problem of racial isolation among Black students in advanced courses at this school is a long-standing one.

> *When [my daughter] was in high school I had a concern that she was the only Black on the principal's list, which is like the honor roll, and oftentimes she was the only Black in the core courses. And I went to the principal at that time and she asked me to do a survey of the minority students as a whole. And some of the concerns that the students had was that they did not like being in Honors courses because oftentimes they were the only ones, and with all of this emphasis on team effort in the classroom learning, oftentimes, you know, you had student teams do activities and you had to work in groups, and sometimes have to get together after school, and oftentimes they felt that they were just sort of the odd person out, and they've felt left out and in some cases they said they felt that the teachers did not make a lot of effort to incorporate them in the class. ...Also some of the kids felt that if they were in these Honors classes, that there appears, the Black kids, look at them as if they were acting White, not recognizing that you could be smart and Black. And they had a real feeling about that. A lot of White kids looked at them, "basically you're not supposed to be smart and Black, so why are you here?" So it was like you were outcast—in a negative light.*

Only two Black students were interviewed at High School D, and their comments echoed those of the counselor. Both students reported that they were "the only one" or one of two Black students in their advanced classes. One student said that she was not friends with most of the other students in her Honors and AP classes, whom she described as "rich White students" who were "snotty." The other Black student, Alisha[3], vividly recalled painful experiences of being

[3] All names used in this section are pseudonyms.

called "White girl" and "Oreo" by a few fellow Black students in middle school when she alone placed into accelerated classes as well as being told she was "not Black" by White students in high school.

> *I think when you walk by a door and see one or two spots (black faces) in a class, I think that's when you start perceiving "Oh, they must be stuck up, rich preppy people."... A White girl said, "[Alisha] you're not Black, you speak correct English, you take Honors courses. You're not what I picture as Black."...I've changed so much since 9th grade. I came in here timid because I am Black and I was the only Black person in my Honors classes. I've had to deal with things from other Black students, Black students who see that I am smart they seem to think that I think I'm better than them. Because I carry myself in the manner that I do, I was called" White girl", "Oreo." That bothered me for a while but now I don't pay attention to it. This was sixth through ninth grade that I was going through this. I know they were saying that out of ignorance and now those same people are asking me for help. I hear it all the time, "I wish I hadn't played around."*

At another school with low minority representation (Middle School J, which is over 50 percent minority) more comments on isolation were heard from Black students. One Black AIG-identified student told us that there were no other minority students in her AIG class and that she was friends with only a few people in the class. She identified a group of students in the AIG class, "preps," whom she did not like. She described these students as "rich," "White," and all "living in the same neighborhood." Other students who discussed the issue of "acting White" insisted that it had nothing to do with academic placement. A Black male AIG-identified student at one middle school (who requested on his own to be retested for AIG) acknowledged a certain amount of taunting from other Black students, but was quick to add that the taunting was not related to his being in AIG (incidentally, this student has earned classroom grades of C and D). He explained that Black students made fun of fellow Black students who engaged in activities that were considered White, like skateboarding, surfing, or using language like "dude."

With the exception of High School D, the issue of acting White and racial isolation in advanced classes did not come up at the high schools visited, either because the school was predominantly minority or because the interviewed students did not encounter any problems in this area. For example, at High School A, which is over 90 percent minority, significant numbers of minority students are enrolled in advanced courses (although here, too, they were underrepresented relative to their enrollment in the school). Nothing was heard about "acting White" from the students with whom team members spoke. Nor did school personnel identify this as a problem. At High School A, both students and teachers said that students taking the advanced courses were perceived positively by their peers. One AP/IB teacher interviewed at High School A said that her regular instruction students "looked up to" the IB students because they appreciate the fact that those courses are tough and admire the students who are able to meet the challenges of the program. In general, at each of the schools visited, students tended to be impressed by the ability of AIG students and students enrolled in IB and AP students, regardless of race.

At High School B, where minority students were enrolled in AP courses (Biology and English) proportionate to their enrollment in the school, there was again no evidence of "acting White" or pressure to underachieve[4]. At High School A, according to school personnel, a significant percentage of the White students who attend the school opt to go to the school specifically because of the IB program. Evidently, the same is not true for the Black students at the school. Similar to the findings at High School A, none of the Black students interviewed at High School B who had taken or were currently enrolled in advanced courses reported any harassment from peers. Comments from a few school personnel support the students' reports. One administrator at High School B said that she hadn't seen as much peer pressure to underperform among minority students at this school as she had seen elsewhere. She said

> *I was really impressed, last year, the first time report cards went out and many of the minority students...walked up to me and said 'Ms. H, look at my report card,' and I saw A's. That was a different experience.*

At most of the schools, team members found that high achievement was valued by all, at least from the perception of the students interviewed. A few of these students admitted that others sometimes made fun of them, but they were quick to add that it was all in fun. Kara, a White AP student, told us that her friends

> *make fun of me a lot for my grade point average. They call me by the number instead of my name. But I don't know, it's a lot of playful joking. And in serious moments they've told me that they're amazed that I can do it.*

As she said, other students are "*intimidated by the amount of work they have to do for one AP class.*" Similar statements were made by many of the interviewed students. **Rather than hearing that students avoided taking advanced courses for fear that they would be ridiculed or ostracized, team members were more likely to hear that other students were envious of AP students and intimidated by or afraid of the amount of work required in advanced courses.** One teacher at Middle School K said that the only time she heard students talk about students in the accelerated classes was when they called them "*the smart ones.*" And Kara relayed the following incident:

> *And there's one girl in my Latin class who's always asking about the AP classes and I'm like, "Yeah, we did this today, and you know, we're going to do this sometime next week", you know like an interesting project I'll tell her about. She's like, "Well, I wish I could do stuff like that, but I could never do the AP work," and I think she could, but I think she's scared of the extra responsibility it would put on her, is the main thing.*

Students across all racial lines are dealing with issues related to high achievement. Among Black students those issues tend to be racialized, especially in situations where there is a visible racial pattern of academic placement and achievement. For some who witness this pattern, it means little; for others, this pattern signifies the order of things, a racial hierarchy.

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[4] It is worth noting that the minority presence in Honors courses is low in School B; this may be a function of the school's success in including minority students in AP courses.

One of the most profound instances of this was at Elementary School G (87 percent minority), where all five of the White children in one predominantly Black 5th grade classroom were in the AIG program. No other children in the class were in the program. One can only speculate about how observing all of the White children (and only the White children) leave the room for AIG instruction influences what the Black children left behind think about the relationship between race and achievement. Therefore there is a context for some of the comments made, such as this one from Alisha: "*If you make all A's you are White. If you're not coming in here with C's, D's and F's then something's wrong with you.*" The attitudes of White students are also influenced by these visibly stark racial patterns. At Elementary School H, which is 74 percent Black with — up until a few weeks prior to the visit — no Black children in the AIG program[5], one White AIG student said of the non-AIG students "*They're, uhm, most of them aren't as smart as the others and like, ninety percent of the people in this school are uhm, well, really aren't smart at all...*".

Among White students, problems stemming from high achievement remain more generally related to being perceived as "a snob" or, as one teacher said, "the nerd idea." One White student at High School F said

> *If they know you are in Honors or AG, they think you are a genius. People see you in different ways, mostly it's a good way, but they also see you as limited in scope, like someone that does nothing but study all day long.*

Another White student at High School E commented that a friend of hers who is in advanced geometry,

> *really didn't want to be in the advanced class because she didn't want to be categorized as one of the snobs. Because a lot of people in advanced geometry, or the advanced classes are, this is kind of weird to put this, but they're kind of rich and they really are snobs...*

While problems related to placement and achievement were found to be most pervasive in the upper grades, there was some discussion of similar issues among elementary and middle school students. For example, Josh, a White AIG student at Elementary School H, told us

> *I feel like kids don't appreciate me cause I'm in higher classes than them, and I'm afraid that I might lose some of my friends because they think that they're too, uhm, not very, well I guess you say "dumb," to be my friend and uhm, I just don't want them to think that, cause they're not too dumb to be my friend, uhm, nothing matters but what's inside. ...Well, my friend in the sixth grade, he was in [program name], [program name] is the program for the kids who aren't very smart—his name was Mark. He got mad at me and wouldn't be my friend for awhile and then I said that I was sorry that he wasn't in there but uhm, it's not my fault that I was, that I was recommended for that, I was just doing my best in school and I got recommended and he said, and told me he was sorry for uhm, not*

[5] One Black male student was placed in their AIG program shortly after we contacted the school about our upcoming visit.

liking me for that long cause I was in AG and uhm, that was basically the only person that was affected by me going into AG.

Both Josh and Alisha (quoted above) hint at a significant but often overlooked point on this matter. Their peers do want to be successful, but they appear to be hurt and insulted when they are left behind academically, and subsequently, they direct resentment toward high achieving students in the form of ostracism, teasing, and taunting. Alisha is conscious of the perception that others may have of her because of her placement and she is also cautious about confirming that perception. In her interview, she commented more than once, "*I don't want to come off like I think I'm better than other people.*" The Black students were more likely to express this concern. Even Mae, a 4th grader, hesitated to use the word intelligent to describe herself because she did not want to "brag on" herself, "*cause maybe if I have friends and I brag on myself they might get angry.*"

While there was no evidence of taunting and teasing for high achievement among Black students at the elementary schools, a desire to participate in the AIG program was found among the interviewed students. Most perceived the program to be for "the smart kids" and either thought they belonged in that group or liked the idea of being identified with such a group. Some of the minority children with whom team members spoke at Elementary School I used the term "cool" to describe being in AIG or the people in the program. At Elementary School H, Mae told us: "*I feel like I'm smart enough to be in that class [AIG]," which she described as "for the academically intelligent people.*" In the high schools, most of the Black students that were interviewed who were not taking advanced courses, particularly those not previously identified as AIG, expressed no desire to do so. This was true for all ethnic groups. Most of these students were content with the courses they were taking and felt that they were where they belonged. **There may be a cooling out process operating for these students such that by the time they reach middle school and high school, many are resigned to their placement, believing that they are not capable of advanced work and that lower-level classes are where they belong.** One White 8th grader at Middle School K told us she thought that she belonged in the classes in which she was enrolled (regular instruction) because she was "not all that smart." Among students taking advanced courses, particularly those previously identified as AIG, they too believed that they were where they belonged. As one of these students said, I've known for so long that I don't think I could go – I don't think I fit anywhere else."

Some indirect evidence was found that some White parents are similarly concerned with the issue of their children thinking that they are better than others. This was found in schools located in the more rural areas of the state. For example, at School K, which is 87 percent White, school personnel told team members that parents sometimes refused the invitation to have their children tested to participate in the AIG program because "they don't want their kids to feel like they're better than anybody else." One individual told us that he used to hear this from parents "all the time." Another individual at this school confirmed the presence of this attitude among parents but added that it came mostly from low-income parents. This teacher believed that parental expectations among low-income parents tended to be low and she cited this and the fact that the parents did not want their kids to be identified as smart as a possible explanation for the underrepresentation of low-income children in the AIG program. Even White students

identified a "high and mighty" attitude, described as "acting like you are better than everyone else" among students in the accelerated classes at Middle School K.

Learning Opportunities

The path to taking advanced courses appears to be most straightforward for previously identified AIG students. Among the sample of students that were interviewed, high school students who had previously been identified as AIG were more likely than their non-AIG peers to have taken at least one AP course in high school (60% vs. 27%). Although this is a small and non-random sample of students, the result alludes to a possible link between AIG identification in grade school and subsequent enrollment in advanced courses in high school.

Differences in course path between AIG and non-AIG identified minority students were starker. Among the 33 minority high school students interviewed, no student on the regular or college prep course path had been previously identified as AIG. Ten of the 14 minority students who were on the AP track and 5 of the 10 on the Honors course path were previously identified as AIG.

The placement process can be a barrier to enrollment in advanced courses early in the high school career. One student interviewed at High School D spent considerable time explaining how her 8th grade counselor attempted to discourage her from enrolling in the higher-level courses she wanted to take in high school. At High School F, it was learned from counselors that only AIG students and other high-achieving 8th graders (students who receive teacher recommendations and who score at Levels III and IV on their EOGs) are encouraged to enroll in Honors courses in the 9th grade. At the 10th grade, the process becomes more open and students are able to enroll in any course as long as they meet the prerequisites. At this school, an AIG coordinator also monitors the AIG students to ensure that they are taking the appropriate courses to remain in AIG. With the exception of High School D where they were in the process of phasing out the AIG program, no other high school continued to monitor or provide additional services for AIG students. Among the students interviewed at School F, all 8 of the AIG students were taking advanced courses compared to only 3 of the 6 non-AIG students (all students were either juniors or seniors).

Exposure to a more challenging curriculum in the early grades better prepares students to meet the requirements (e.g., heavy work load, in-depth material, etc.) of advanced courses as they progress through school. The AIG programs in the schools largely focused on teaching problem solving and critical thinking skills using a variety of projects and activities. On one level, preparation for enrolling in higher-level courses is a matter of building these critical skills as well as students' self-confidence. The interviewed students who were previously AIG-identified tended to convey less reluctance to take advanced courses than other students. While they, too, would like to "relax", as one AP student said, they appear to be more confident about their ability to handle the workload and to do well in AP and Honors courses than students who have not had prior exposure to an advanced curriculum. Isha, for example, said she

> *knew they [Honors courses] would be harder than regular, but I mean, I didn't know exactly how hard they would be. I mean I know it wouldn't be real, real*

hard. I knew I could do it. I mean I knew I had good grades in certain subjects all the time so I knew maybe I was better in this and whatever, so I'll just take an Honors class.

Conversely, Liz, a Black student who had not been identified as AIG, was taking an Honors class for the first time as a senior and, by her own admission, was struggling. Not all non-AIG identified students interviewed struggled in advanced courses, however.

On another level, preparation is purely a matter of the sequence and timing of courses. A primary case in point is the math sequence. Students who have the opportunity to take Algebra in middle school are on track to take more high-level math courses in high school. Although students offered no comments on this point, some school personnel did.

But one problem I found, here lately, among the Black students, so often they take those lower-level math, in the middle school. And when they get to high school, they don't have a foundation. And you can look at their grades, K through four, and see that they were pretty good students. But a lot of them got labeled as discipline problems or just weren't tracked properly, so if your kid comes to me and they've got an A in pre-Algebra, I cannot put them in Algebra I, I have to put them in Algebra IA or IB, based on our criteria. ... See, a lot of parents don't understand this. My kid has an A. Yes he has an A, but he has an A in the lowest math, and this doesn't prepare them for the highest math. And I think kids need to be educated in the middle school. And if you get the kids put in a fifth, sixth, seventh, and eighth grade, on a lower level math, they are not going to have the skills...

As this counselor points out, some students enter high school academically unprepared to take Algebra I. In cases where the student has to break the class into the 2-year or 2-semester sequence, the number of advanced math classes they will be able to take further decreases.

At the middle school level, Algebra is not always open to all students. This was the case at the two schools visited for this study. Pre-algebra and Algebra were open to 7th and 8th grade students, respectively, based on set criteria. Both schools required specific math grades and EOG test scores. Middle School K also required a qualifying score on the Orleans-Hanna test and the other added teacher recommendations. At Middle School J, parents can disagree with the recommended placement and have their student placed in the accelerated class; however, most do not. At Middle School K, teacher recommendations were eliminated as part of the placement process for accelerated classes due to parents pressuring teachers to have their children placed into accelerated classes.

Teacher Expectations

At most of the schools, the teacher's role in the placement process was significant: teachers are often the first to call attention to students with higher potential and refer them for AIG testing or encourage them to take advanced courses. In terms of AIG identification, this is a key role, especially in schools that do not have "sweeps" (annual tests given at a particular grade

level to screen for possible AIG identification). This is particularly important for minority students, whose parents, from all reports, tend to be less aware of these special programs.

In interviews with elementary school personnel it was learned that these schools currently had no systematic process of getting information on the AIG program to parents. None of the three elementary schools included information on the school's AIG program in the school handbook (if there was a handbook). One school was in the process of adding that information to the handbook for the upcoming school year. And while another school did have a pamphlet on the AIG program, the African American children with whom team members spoke were more likely to report that their parents did not know about the AIG program. In most cases, it was the children who informed their parents that there was such a program. Moreover, although this school has an open house session, no information on the AIG program is presented.

The most common explanation offered by school personnel for the paucity of minority students in the AIG program and accelerated classes is that these children are less likely to meet the achievement and/or aptitude test score requirements. School personnel often perceived students' failure to meet these requirements to be tied to a range of family background factors and social problems, including limited mainstream cultural experiences, less educated parents, lack of parental support, lack of encouragement, lack of emphasis on education and excellence, and lack of discipline and supervision in the home[6]. Some teachers were also said to be less likely to nominate minority children for AIG screening because the children do not exhibit the verbal skills, academic performance and/or behaviors that teachers consider as indicators of giftedness. In fact, some school personnel suggested that behavior is a major factor in teacher nomination decisions and that teacher perceptions of children based on behavior keep many children, particularly minorities, out of the program.

At one elementary school, however, found something different was found. At Elementary School I, a few individuals mentioned that they paid particular attention to students who exhibited behavioral problems because those behaviors sometimes indicate that a child is bored and would benefit from more challenging work. One teacher also mentioned that she looks for children with "questionable social skills," as this too can be an indication of giftedness. This teacher has nominated two children in her classroom for AIG screening this year; one has met the placement criteria and the other, a Hispanic male, has not. Both children are currently receiving services. Here the teacher addresses the issue of behavior:

> *It can be either [that when a student has] severe behavioral problems, [teachers] fail often to recognize them. They think that [if] they're a behavioral problem, they're not smart, if they were smart, they wouldn't be a behavioral problem. So what I usually look for is students that may be depressed, show signs of depression. ...so I think this is an area that a lot of teachers are failing to recognize, that these students are, a lot of your worse behavior problems are really extremely gifted and I think that's where we're missing the whole boat on a lot of students being identified...*

[6] Although we were more likely to hear these explanations in the context of discussions of minority students, we heard similar explanations for the academic problems of White children.

Of the Hispanic male student she nominated for AIG screening, the teacher said

> *He would be a prime example of a New York State gang leader. New York City gang leader, prime example. He's got a great personality but he's frustrated with the whole – you know he has problems at home, father died at an early age so of course that's a problem and he needs counseling. ...And I think it's really a shame that we are missing these kids. ...he, he'll whip through his accelerated math in a matter of minutes and he's up at my desk wanting more. Well, if I was the typical teacher I'd say, "Go sit down, you can read a book, just wait until the others catch up." Well that's wrong, that's wasting his time. I'll say to him, "Okay [name], go ahead and ask the computer specialist if she can run you a new report, you can work on that." And often I'll have him at his back table doing his own thing, totally separate from the rest of the class. ...This is the one we're watching, that I want, I'm hoping he'll be identified by the next year. I think the problem is a lot of these students that have behavioral problems, and they have anger and frustration, it's keeping them from being able to perform. And I think even though they have given him IQ tests, I think he is capable of much, much more, but he has to be in a good mood to take a test. If it's not a good day for him, he'll just throw papers on the floor and say, "I'm not going to do this and I don't care." And just by me allowing him to work at his accelerated math at his own pace and let him choose what he wants to do in math, he's showing progress. Most teachers want to have their thumb on the children; well, these children don't need a thumb.*

This child was fortunate that his teacher responded to his behavior in this manner. For most children, the response is quite different. Black personnel, particularly at the elementary schools in the study, almost always brought up this issue of teacher perceptions of behavior. Some also mentioned that they thought that teacher expectations were low for minority children. Low expectations were attributed, again, to a host of family background factors and social problems.

It is important to note that both AIG-identified and "high-potential" students are served in the program at Elementary School I. The school currently serves these students through a pull-out program with an AIG specialist and through enrichment within the regular classroom, usually with an AIG-certified teacher (the school was in the process of having all classroom teachers obtain AIG certification). The AIG specialist informed us that they were in the process of restructuring the program so that high-potential children are served within the regular classroom and only the identified students receive pull-out services. **Program structures that provide services for high-potential students may make a difference in allowing more children to receive enrichment. However, this may not necessarily address the issue of the underrepresentation of minority students.** For example, at one elementary school, teachers in the lower grades were providing enrichment within the regular classroom for high-potential students, but some of the teachers described what they thought were low expectations for Black students and said that Black children were not pushed or expected to be "bright" students eligible for AIG. Thus, just creating space to include more students may not in and of itself have the desired effect of increasing minority student representation in these gifted programs unless other changes occur as well.

At the middle and high school levels, teacher and counselor expectations are communicated through student placement recommendations. At all schools, recommendations are based on past performance, including test scores and grades. In most cases, student interest, level of motivation, and goals are also considered. At middle schools, though, teacher and counselor perceptions of course difficulty, regardless of student prior performance and ability, often work to discourage students from taking advanced courses. As students transition from middle school to high school, they rely heavily on counselor and teacher recommendations for placement. And while parents are always included in this process, they too seem to rely on the recommendations of school personnel. For example, although in most cases parents have the option of some type of a waiver (formal or informal) to go against a placement recommendation, most follow the school's recommendations. In any case, there are times when school personnel make recommendations that underestimate student potential. Some of these cases were discussed by high school students.

> *When we were in middle school, we were told not to take the Honors courses because they were too much work and unless you had a hundred average not to do it. My eighth grade year, I had to* ***beg*** *to be put into the Honors courses and I had straight A's. I had a hundred and two final average in science. But they just didn't think that people would succeed, and I find that school counselors won't let my friends in Honors courses, and they're afraid that they won't succeed and that they'll be putting them in a class that's over their head. And they did that to me in eighth grade but I'm the type of person that if you tell me I'm not gonna succeed, of course, I'm gonna take the class* ***just*** *to prove you wrong,* ***just*** *to prove you wrong. But my friends got discouraged and I find that, I have friends that are freshmen this year, and last year [I told them], "Oh, please take the Honors course, it's not that much harder, you'll do it, it'll look good." And their counselors just tell them not to. [Counselor name] did not want me to take the Honors and the AP courses. We have to do a four-year plan and plan out all the classes we're taking, and I had every AP class I could possibly squeeze in there on my schedule and every Honors course and every French and everything that I could possibly get in there and she said, "But don't you want to take interior design and don't you want to take theater?" ...And that happened to a lot of my friends and so a lot of my friends are taking drafting and graphics, which are good courses...but that' s not where they want to go. [emphasis in the original]*

A student at another high school told us that her 8th grade Algebra teacher told her class not to sign up for Honors classes in 9th grade because he did not think they were prepared. She explained that the teacher had been out sick a lot during the term and was concerned that the students were not prepared for the next level of math. The student took the Honors class in spite of the recommendation and earned above 90.

This last student is Black and the former is White. The issue of teacher expectations is important for all students in matters of placement. However, some personnel (both Black and White) at a handful of schools told us explicitly that discrimination and/or racism was a factor in the underrepresentation of minority students in gifted programs and advanced classes.

Socioeconomic Status

From the interviews with students and school personnel, it was learned that parents also play an important role in student placement. More educated parents seem more likely to advise their children to take more advanced courses. However, many of the interviewed students who were taking advanced courses, independent of parent education, explained that their parents told them that they would benefit in some way or another from taking advanced courses. In some cases, high school students or school personnel report that parents "push" children to take advanced courses. From the perspective of the school, this was not always a good thing. Counselors, teachers, and principals expressed concerns about parents pushing students into classes that did not seem appropriate for the child. On one level the concern was for the student. If the class is too difficult, the student may struggle, or at worst, fail, not to mention that the student is likely to be unhappy. On another level, the concern was for the teacher. Most teachers of advanced courses prefer to have students who want to be in the class, are highly motivated, and have an interest in the subject matter; such students tend to do better in the course and present less of a challenge for teachers. These are some of the characteristics that teachers and counselors look for in making most placement recommendations. "Pushy parents" were also mentioned at a few of the middle and elementary schools in the context of discussions of the AIG placement process. The parents who were most likely to be "pushy" or to push their children into taking advanced courses were often described as higher-income, more educated, and White. Interestingly, among the minority high school students that were interviewed, there were no differences in parental education between students on the advanced course path and those on the regular instruction path.

In general, from most accounts, more highly educated parents appear to be more aware and knowledgeable about the programs and opportunities available to students. These parents also appear more assertive and persistent in finding out what is available and getting their children access to those opportunities. While parents were not included in this study, some insight was gained about the role of parents from school personnel who faced some of these issues with their own children. These individuals eagerly shared their experiences. Here, a guidance counselor recounts her experience:

> *My daughter participated in Governor's School, but I have to be honest and say one of the reasons she did is because I persevered in looking at some of the things. When I moved here, like I said, she was tested for AG and she would always miss by one point. So I wound up taking her to a private psychologist, and he said there's no reason why she should not have been placed in the AG program. I even wound up calling Raleigh to see what the guidelines were for the AG program. And she did get into the AG program. And you know, she was very successful. But I think that one of the reasons she was very successful was because both me and my husband, we monitored her progress throughout the whole process, and so many kids do not have parents that monitor them, and they sort of get lost and by the wayside, because I know there was a little boy in her class, he wound up going into the service. But when they were in the eighth grade he pretty much had the same GPA as my daughter did. But at the time he got out*

of high school, you know he did not have that parental support and a lot of things he was not able to participate in, a lot of things he was not aware of. And a lot of things that I did, -- I connected with guidance counselors at other schools and everywhere, to find out what she should be doing and how she should be doing it.

This woman's statement raises another issue, that of financial resources. In many schools, parents have the option of an external evaluation for AIG placement; however, not all parents know this, and many are not able to afford to go this route. Another school counselor also had her daughter tested by a private psychologist.

Going back to my own experience with my own child, pushed for it and she was identified. ...Well at that time, this must have been like eighty-six, eighty-seven, she was a second grader. I think they had a program in the system called Exploratory AIG meaning they would take the little kids and they'd go out and they'd do some stuff. All of her friends were in it. I didn't know what she was talking about. I wasn't even in the school system then. And so I went and I found out about it – it was in [name] County Schools at that time. And so I went and asked about it and she was placed in there. Then in third grade when they did that sweep she did not qualify, that third grade test. ....Then the AIG teacher gave a—she along some AIG kids, another group IQ test, still didn't qualify. And so I just had her tested independently and of course she qualified.

Both of these parents are Black, and although race may not have been a factor in their experiences, they do suggest that with more advocacy for Black children, either by parents, teachers or some other adult, more children would be able to participate in AIG programs.

While some parents push their children to take advanced courses, others sometimes support their children's decision to take lower level courses against the school's recommendation. At the elementary and middle school level, some parents refuse to allow their children to participate in the AIG program because they do not want their children to think they are better than other kids. Most of these accounts came from schools in rural areas and often, but not always, the parents tended to have less education themselves.

IX. Promising AIG and Advanced Studies Programs in LEAs

The programs and strategies identified in this Section suggest structures and models that may be useful in better identifying and serving minority and low-income students. The specific instruction and services provided were not assessed and no judgment is placed on those aspects. However, the structures and approaches seemed to represent new directions of promise.

Gaston County: Pathways to AIG Services [Contact: Dr. Brenda Romanoff, Director of Advanced Studies]

Gaston County appears to have a very progressive and well-thought out AIG program. It is built upon a multiple–intelligences, problem-centered philosophy that integrates targeted critical thinking skills across disciplines for identifying and serving underrepresented populations. The philosophy of this program was featured in *Educational Leadership*, September 1997, in an article titled "Using Multiple Intelligence Theory to Identify Gifted Students" written by Carol Reid from the Charlotte-Mecklenburg Schools and Dr. Romanoff.

Dr. Brenda Romanoff has been working to develop more clearly differentiated levels of services that meet the needs of highly able and gifted students and to develop Service Delivery Options with clear criteria for identification and service for each level - called a "pathway." This model illustrates service delivery levels or pathways of differentiation based on individual student instructional and curriculum needs.

While students are identified at all grade levels, grade levels are grouped into grade clusters and each cluster has Service Delivery Options that specify the following: Pathway (i.e., Service Level), Learning Environment, Content Modification, and Criteria for meeting that level. An important feature of this programmatic approach are clear, but somewhat flexible, identification criteria and clear learning environments/settings as well as content or curriculum to be delivered at each level. Differentiated Education Plans (DEPs) are to be consistent with the level of service met by the student.

Teacher referral creates a screening pool at each school beginning in Kindergarten. The AIG teacher and assistance team review multiple criteria (aptitude, achievement, performance, and teacher recommendation) to determine if the student should be assessed for the AIG program and, if placed, which pathway(s) are most appropriate for that student. The first pathway is classroom enrichment grouping in reading or math. The second pathway is direct service from the AIG teacher in and out of the regular class. The third pathway is content acceleration in reading and/or math with indirect services from the AIG teacher, but provides the opportunity for the student to attend class at a higher grade level. The fourth pathway is grade acceleration, which requires extensive testing, observation, and a team decision for permanent placement at a higher grade level.

An important programmatic feature at Grade 2 is the "Composer Program" at select schools with 40% free and/or reduced price lunch. This program was developed to pursue the exploration of ability among a larger group of disadvantaged and minority students, including

those not yet at the AIG level but with the potential to be AIG. A class of Composer students demonstrates strong abilities and potential but their academic skills vary greatly from student to student. Schools are selected on a volunteer basis by a central office team, must serve a diverse population of students, and must make a strong commitment to teacher staff development. After placement, some students may ultimately be identified as gifted, but the program does not guarantee that outcome. It does guarantee that the instruction will be differentiated, so that both the thinking skills and academic skills of all Composer students will be challenged and strengthened.

Pathways for grades 6-8 are based on middle school curriculum offerings and structures. The first pathway is Honors reading/language arts (LA) and/or mathematics. The second pathway is advanced reading/LA or mathematics. The third pathway is Algebra 1 in Grade 8, and the fourth pathway is content acceleration in reading/LA and/or mathematics.

High School pathways are somewhat different given the structure of the high school curriculum. Each of the following pathways specifies the achievement required, prerequisites and any recommendations required:

First Pathway :	Honors Classes
Second Pathway:	Advanced Placement Preparation Classes
Third Pathway:	Advanced Placement Classes
Fourth Pathway:	Huskins Program
Fifth Pathway:	Dual Enrollment

Other Notable Program Aspects: A TAG (Talented and Gifted) Team of four expert teachers was established to work with the middle school teachers on differentiating instruction and curriculum, finding resources, providing professional development, as well as identifying eligible students. These teachers work with Grade 6-8 teachers in their classroom, providing model lessons and co-teaching at times.

Early results for minority representation: Although only begun in the 2000-2001 academic year, this clearly specified and incremental approach to AIG identification and service delivery is already yielding results in raising the percentage of minority students in the AIG program. For example, in grades K-5, 11% of the AIG students are minority (as of March 2001), rising from 7% at the beginning of the school year. In grades 6-8, the percentage has grown from about 5% to 8%. In grades 9-12, the growth was 50 percent, from 6% to 9%. While these percentages are below the minority population of the school system as a whole, the increases in growth within a well-defined rigorous program are notable.

Gaston County: Ashbrook High School

Principal Bob Wilkerson has used flexible scheduling to develop an "Advanced Studies Academy" to provide expansion of Advanced Placement (AP) and Honors opportunities for students at Ashbrook High School. The creation of the Academy will "afford teachers a common, collegial planing time to develop interdisciplinary teaching strategies, utilize outside learning resources, and develop leadership and teaming among staff and students" (from

Statement of Philosophy). He has used a combination of 4x4 and A/B block scheduling to establish three academy "tracks:" a Four-Year Plan for Honors, a Four-Year Plan for Advanced Placement, and a Four-Year Plan for AP Acceleration (for students coming to high school without Algebra 1, basically a "fast track" for students not getting a head-start in middle school). He handpicked very strong teachers for the Academy. Academy teachers are all AP certified and are required to have or obtain AIG licensure.

They do not have open enrollment, but if a student does not meet one piece of the criteria, they can waive it and have the parents and students sign a letter of commitment. They also have made some exceptions if a student is marginal on entrance requirements but really wants to try the Academy track, again getting a letter of commitment. Mr. Wilkerson noted that while enrollment is not open, they have a responsibility to "grow" their students, to prepare them for more rigorous courses.

Again, although 2001-2002 will be the first year of implementation, the gain in minority student enrollment is promising. The following enrollment figures are provided for the upcoming year, representing a large increase in minority enrollment over Honors and AP courses for the 2000-2001 school year (which was typically 2 to 3% in the past).

Minority Enrollment in Honors Courses 2001-2002 School Year		**Minority Enrollment in AP Courses 2001-2002 School Year**	
Eng.11	22%	Eng. 11	10%
Eng. 12	30%	Eng. 12	13%
US History II	22%	US History II	10%
Sociology	23%	European History	13%
Algebra II	23%	Statistics	14%
Pre-Calculus	26%	Calculus	13%
Chemistry	23%	Biology II	12%
		Environmental Science	18%
		Physics	25%

Guilford County Schools Advanced Learner Program [contact: Ann Barr]

The Advanced Learner Program, which is in its third year of implementation, emphasizes appropriately matching a student's demonstrated need for academic differentiation to a specific service level on a continuum of services.

Identification. Multiple criteria - achievement and aptitude test data, grades, a teacher checklist, and portfolios – are used to determine eligibility. If they meet 4 out of the 5 criteria, students are then identified as having either a moderate, strong, or very strong need for Advanced Learner services. Further efforts are made through additional and alternative assessments (e.g., nonverbal tests, etc.) to identify and serve those students who have been underrepresented in AIG programs in the past. The qualifications for the strong and very strong

service levels approximate the requirements that were traditionally used to determine AIG eligibility prior to the passage of Article 9B. The Moderate level of identification adds an additional tier of students who receive services. Identification of students typically begins at the end of grade 2, and student data are reviewed each year at the higher grade levels as well to find new candidates for the program. Trained teams at each school, which may include parents, counselors, the school's AIG specialist, and others, carry out the identification process. According to the system, this new program has resulted in an increase in the percentage of minority students receiving AIG services in Guilford County.

Service Delivery. A Differentiated Education Plan (DEP) is developed for each student in the program that describes the specific curricular and instructional modifications that will be made for the student. Services provided to students in the moderate category typically include differentiation within the regular classroom, while the strong and very strong category students typically receive at least some pull-out instruction along with homogeneous grouping and/or differentiation in the regular classroom. Students in the moderate category may also receive some pullout services on a space-available basis in some schools. Another important aspect of the program is that students who are originally identified in the moderate or strong service levels can move up to higher levels of service as their academic performance improves. For example, based on EOG scores from 1999-2000, 416 students (including 53 non-White students) moved up from the moderate to the strong category for the 2000-2001 school year. Delivery of services is supported by an AIG specialist assigned to each elementary school (at least half-time) and five program facilitators at the middle school level (shared by all middle schools in the system). *In high impact schools (i.e., schools with many at-risk students), these specialists focus on nurturing and enriching the top students so that more of them can be found eligible for the Advanced Learner Program.*

Charlotte-Mecklenburg Schools [contact: Mr. Jimmy Chancey]

The Charlotte-Mecklenburg school system (CMS) has several innovative programs in place to provide all students with access to high-quality, rigorous curricula. In addition to having a tiered model of advanced curriculum services in middle school, they have also implemented as of this school year a special AP program for all of the high schools in the district.

Talent Development Program. At the middle school level (grades 6-8), CMS has a Talent Development program in place system-wide for English/language arts and mathematics. The program has two tiers - Accelerated and Scholars - which have open enrollment. Although many of the students in this program are AIG-identified, the program is open to any student who wants to enroll. This Talent Development program provides accelerated, high-level instruction in core subjects that allows middle school students to have access to what is typically high school-level coursework. For example, the Accelerated tier telescopes the middle school mathematics curriculum so that students are ready to take Algebra I by the time they are in 8th grade. In essence, the typical 6th-8th grade middle school mathematics curriculum is condensed into two years to allow students access to Algebra in middle school. The Scholars tier condenses the math curriculum even further so that students can take Algebra I as 7th graders and Geometry in 8th grade.

Access to this level of coursework in middle school should theoretically pave the way for enrolling in higher-level courses in high school, and is therefore particularly important for students who are underrepresented in those courses. Although White students enroll in the program at a higher rate than Black students, anywhere from 17-24% of the system's Black students are enrolled in the program, depending on the tier, grade level, and subject area. Although enrollment in this program is open, middle school counselors also make specific efforts to find candidates for the program by examining students' cumulative folders each year to ensure that students who show potential are encouraged to enroll.

AP Program. At the high school level, CMS has started a system-wide AP Certified Schools program. This initiative allows each of the 14 high schools in the system to apply to become "AP Certified". This certification is based on four global criteria, under which there are several benchmarks that the school must achieve. High schools that meet certain indicators under each of those four criteria receive a Silver award, and those that meet even higher standards are given a Gold award. The program is currently in its first year, with 10 of the 14 high schools in the system achieving Silver award status. In this first year, schools only had to meet the first criteria (Course Offerings) to be certified; as of next year, schools will have to meet all four criteria.

The first of the four criteria for this program requires schools to offer certain AP courses within five domains: Languages, mathematics, natural sciences, social sciences, and elective. The level of the award given to the school (i.e., Silver or Gold) depends on the depth of course offerings in each of these five domains. For example, in mathematics, a school must offer AP Calculus AB and AP Statistics to be eligible for a Silver award. To get a Gold award, however, a school must also offer AP Calculus BC.

The second criterion - Program Support - has to do with the presence of various instructional support mechanisms that are in place to help students get ready for AP courses. For example, schools must offer Pacesetter courses in English to obtain a Silver award, or in English and Pre-calculus to qualify for a Gold award. Pacesetter courses are designed by the College Board, and essentially serve as "pre-AP" courses to help prepare students for AP courses in those subjects. Other indicators within the Program Support criterion include the presence of a certified AVID program in the school (see the AVID description later in this section), vertical faculty teams in core subject areas, and appropriate instructional materials such as those supplied by the College Board.

The third criterion - Professional Development - has to do with the training and credentials of the teachers who are teaching AP courses. Some of the specific indicators that schools must meet refer to the percentage of AP teachers who hold master's degrees, as well as the percentage of AP teachers who hold AIG licensure. The school must also provide evidence of recent AP and Pacesetter training for teachers who teach AP courses. In addition, all AP teachers must have either a college degree and/or certification *in the specific AP area that they teach* in order for the school to qualify for either award level.

The fourth criterion - Student Access and Support - focuses on the mechanisms the school has in place to encourage students to enroll in AP courses and the supports that are

available to them once they are enrolled. One interesting aspect under this criterion is that schools must use students' PSAT scores to determine appropriate course placement. CMS administers the PSAT to each student in 9th and 10th grade every year. One of the end products of this assessment is an individualized profile (generated by the College Board) for each student based on her/his PSAT results that helps counselors and teachers determine which AP courses each student should take. During the summer, counselors are paid to work extra hours contacting students who are qualified for particular AP courses according to their PSAT scores, but who have not enrolled in those courses, in an effort to encourage them to enroll. (A proposed change for the 2002-03 school year will automatically enroll every student in each AP course for which s/he is qualified based on PSAT scores, and the student will then have to request to drop the AP course in order to opt for a lower-level offering.)

This fourth criterion also requires schools to remove prior approvals and prerequisites from all AP courses to encourage enrollment. Other indicators under this criteria include the presence of tutoring and extended day programs for AP students from underrepresented populations as well as availability of distance learning and online resources for AP curricula. In support of this last requirement, CMS has purchased access to the APEX online review for all students. This online resource provides instruction and benchmark testing that students can use to help prepare for 10 different AP exams during the weeks leading up to the Spring AP testing sessions.

The AP Certified Schools program reflects CMS's commitment to encourage more students to enroll in high-level courses. Over the last few years, CMS has made significant progress in this area, particularly among Black students. Since 1996, the number of AP enrollments by Black students has more than doubled, rising from 431 in 1995-96 to 974 in 1999-2000. The number of AP exams taken by Black students also increased accordingly from 130 to 406 during that same time period.

Chapel Hill/Carrboro Schools [contact: Sandra Page, Coordinator of Gifted Programs].

With the introduction of the new AIG plan in this system, a major focus was created on differentiated instruction in order to meet the needs of gifted students. The system's experiences implementing a successful differentiated instructional program were featured in *Educational Leadership*, September 2000, in an article titled "When Changes for the Gifted Spur Differentiation for All" by Sandra Page. Also, the high school will begin "clustering" minority students in the 2001-2002 school year when there are only a few such students who are enrolled in a given AP course. This grouping is hoped to achieve additional peer support as they work together in these rigorous courses.

Advancement Via Individual Determination (AVID) [contact in Chapel Hill/Carrboro: Terry Greenlund].

AVID is being implemented in various schools in at least 7 LEAs across the state. A number of other LEAs across the state are in the initial stages of implementing this program. The Charlotte/Mecklenburg and Chapel Hill/Carrboro school systems have had the longest experience with AVID and are beginning to obtain some information and results on the effects of

the program. Both of these systems have strong AVID programs and are models for other LEAs wishing to implement this type of model. AVID is a nationally developed program that has been implemented across the nation in various places for the several years. AVID targets average-achieving students who show higher potential but would not normally opt or be eligible for rigorous or academically challenging classes the opportunity to take those courses, as well as to receive the support necessary to succeed in them. The goal of the program is to increase the number of students in this target population who gain admittance to and successfully graduate from college. These students are often first-generation "college-goers." Among other activities, AVID provides a class where identified students are provided problem-solving instruction and practice, homework support/assistance, support for each other, and instruction on how the Honors/AP system works.

For three years of graduating AVID cohorts in the Chapel Hill-Carrboro school system, almost all of them have gone to four-year colleges. In the first cohort, one student went into the military. In the second cohort, one student did not engage in the program and did not continue with post-secondary education, and another student decided to attend a two-year community college for the first two years. In the current graduating class of AVID students, all participants are going to four-year colleges. Clearly this program, with an enrollment of at least half African American students, has met the goal of getting students to college. It should also be noted that AVID teachers and staff demonstrate real commitment and devote extra time to helping students understand and complete the college application process.

Chapel Hill-Carrboro's AVID program has plans for 2001-02 to work with the system's AIG program to include minority middle school students who have higher grade-point averages and are already enrolled in advanced programs. These students would not typically be included in AVID because they already achieve at a higher level. However, it is believed that they could benefit from the support system that AVID provides in an effort to ensure they remain in the advanced studies programs.

X. Conclusions and Recommendations

These recommendations and conclusions are drawn from the data analyses, the case study visits to schools selected for varying Disparity Index scores, and the visits to districts and schools that demonstrate promising practices conducted by DPI staff. Recommendations by the external evaluators that overlapped with those of DPI staff were merged. Recommendations are grouped according to the categories of Policy Considerations, Identification and Participation, Program Structure and Student Support, Rigor in All Programs, Student Motivation, and Data/Information. Some of the recommendations overlap other categories, and aspects of one recommendation may relate to others.

Policy Considerations

1. Insure that all students take Algebra 1 before they enter ninth grade. The elementary and middle school years seem to be critical **gateways** to confidence and preparation for more demanding high school courses. The specific "Algebra Gateway" appears to be particularly important. LEAs that do not offer Algebra 1 at the middle school level would need to develop the instructional capacity to do so. In general, a more demanding curriculum that is successfully completed in middle school will more likely lead to the confidence and competency to take more demanding courses in high school. Excellent curricula exist to expose elementary school students to the principles and foundations of Algebra (Hoff, 2001b). The techniques developed by Robert Moses' team in the Algebra Project may prove fruitful for universalizing Algebra exposure during middle school (Hoff, 2001a). Hoke County's STAR Algebra 1 project also may provide an effective model for providing Algebra instruction to middle school students. The state may need to consider the potential disincentive effects on earlier Algebra instruction posed by existing regulations that preclude giving high school credit for Algebra or Geometry courses taken in middle school.

2. Explore modifying the state's accountability program to incorporate a component that addresses the academic performance of minority students. High ABCs performance composite scores are not generally associated with better minority representation in advanced curricula. For example, at the high school level, in addition to achievement on EOC tests, the state accountability model should consider measures such as percent minority enrollment in Honors and AP classes, as well as disaggregated growth and performance composites by ethnicity. The modified school performance criteria should continue to be linked to principals' and teachers' incentives via salary supplements.

3. Establish district-wide policies regarding and monitor academic progress of minority students. In all districts, a high-level administrator should have responsibility for monitoring the academic progress of minority students and establishing district-wide policies to facilitate access to (and success in) high-level courses and programs for minority students.

Identification and Access to Advanced Coursework

4. Improve identification of minority AIG students at earlier grade levels. Prior AIG/Honors experience for minority students in promoting their subsequent participation in AP classes is important. This might be accomplished (1) by using more diverse methods and instruments and (2) by training teachers to see talent in more varied ways. Typical identification measures appear to be skewed towards children's ability to communicate in standard English (George & Harrison 2001). This may adversely affect judgments about those black children who do not speak standard English. Of course, many younger Hispanic students only speak English as a second language. Since the results of this study show that teacher recommendation is currently the most significant route to AIG status or subsequent testing for AIG eligibility, professional development aimed at enhancing teachers' ability and sensitivity in identifying a wider range of students who can benefit is essential.

5. Use multiple and diverse assessments that tap individual skills in different ways. A number of LEAs indicate that they use non-verbal intelligence tests, such as the Ravens Progressive Matrices, the Naglieri Nonverbal Ability Test (NNAT), and the Test of Nonverbal Intelligence (TONI), in an effort to identify students who may manifest their advanced abilities in different ways. This study found that schools using a particular non-verbal assessment (Ravens Progressive Matrices) do not necessarily identify proportionally more minority AIG students. The *will* to change the demographics of AIG populations is more critical than the particular testing instrument, but the use of a broader range of instruments that test for analytical ability without being bound by particular skills will be helpful.

   While the limited available data do not indicate that more minority students in North Carolina are identified by such tests, more diverse assessments are desirable and reflect the contemporary understanding that ability is manifested in different ways. Naglieri (1999) has shown on a national sample that similar percentages of black (2.4%) and white (2.5%) students are identified at a cut-score of 130 on the NNAT, followed by 1.8 percent of Hispanic students. Thus, LEAs might consider following up with additional and different assessments to increase the numbers of minority students in advanced programs.

6. Provide professional development that helps teachers and administrators gain a deeper awareness of the multiple forms intelligence can take and of diverse ways of teaching. This recommendation is linked to multiple forms of assessment for identification; however, it addresses the ways assessment information may be interpreted or student talents may be manifested. Persons providing professional development would need to have expertise and be current in best practices and approaches in the area of multicultural education and meeting the diverse needs of under-served populations. Trainers with such expertise will assist teachers and administrators in gaining a deeper awareness and understanding of multiple forms of intelligences and the application of this information within the curriculum and the delivery of instruction to diverse learners.

7. Explore ways to more rapidly identify and place minority students in AIG programs. George and Harrison (2001) suggest that principals of any middle or elementary school with

severe minority AIG underrepresentation could immediately raise the minority presence in AIG by at least ten percent and that this can be justified on the basis of errors in minority identification. While a specific percent is hard to determine objectively, schools with severe underrepresentation should consider options for an immediate remedy. Schools with High Potential programs in place can draw students from them who would likely succeed in AIG. The absolute number of minority students in advanced curricula as well as their relative presence must be addressed.

One possible strategy is to consider the top 15 percent of students (based on developmental scale scores, not percentile ranks) in the LEA as AIG eligible. Then take the next 15 percent as a nurturing pool to be provided with a critical thinking skills curriculum that will enable them to meet the AIG standards. This second 15-percent tier can constitute the High Potential group in schools that have not yet adopted such an initiative. As the children begin to develop their skills as critical thinkers and start seeing themselves as high achievers, it will justify extending the critical thinking skills to a still wider group of students. All students should be reviewed annually to determine whether they might benefit from curricular experiences that emphasize development of critical thinking skills.

8. Provide professional development that assists teachers to distinguish between behaviors and academic ability. Students who are "teacher pleasers" are not always gifted; disruptive behavior is often linked to boredom or mismatched instructional approaches; and a passive student may be a gifted student with a disability. Teacher perceptions of lower academic potential being linked to disorderly or passive behavior have to be changed. Talented students, especially minority students, may never be recognized as meriting more challenging study in the early years because they do not behave in ways that preserve some teachers' views of the orderly or desirable classroom.

9. Systematically seek out high-performing minority students. The results of this study indicate that some higher-scoring students choose not to enroll in advanced courses. In Charlotte, where the PSAT is administered to all 9th and 10th graders, students who score well but are not enrolling in Honors and AP courses in high school are contacted by counselors each summer and encouraged to enroll. This deliberate identification and encouragement of able students takes time and effort, but probably results in including more minority students enrolling in more rigorous courses of study.

10. Provide open-enrollment opportunities to participate in advanced courses. A number of schools indicated that they have open enrollment for Honors courses, AP courses, and the International Baccalaureate. That is, while they may recommend that some students enroll, they will include others who may not immediately meet some defined eligibility criteria but who are committed to making a serious effort in the course. Some require a letter of commitment by the student (and sometimes parents). Other schools have defined entrance requirements, but have flexible requirements or waive them for students who indicate a willingness to make a serious effort in the advanced course.

11. Use technology to provide access to and to support success in advanced courses. One of the major findings in this study demonstrates that AP courses and in-field AP teachers are not

equally available in all schools in all areas of the state. Online AP courses may be a way of offering advanced coursework to students in schools and LEAs where it is prohibitive to offer the depth and breadth of AP course offerings that can be found in larger schools and systems. Other online resources such as APEX – an online curriculum resource designed to help students prepare for some AP exams – represent another possible avenue whereby students can have access to advanced course materials regardless of where they are located. The DPI should explore costs associated with this approach.

12. Expand statewide incentives designed to increase the number of minority and low-income students taking AP exams. Through submission of a grant to the U.S. Department of Education, the DPI plans to build on activities already in place that give underrepresented groups access to AP opportunities such as online exam review and exam fee reduction. With the additional grant funding, The DPI proposes to expand online AP course offerings to rural and low-income LEAs and to offer regional professional development sessions for secondary teachers to expand their capacity to offer AP courses in their high schools.

Program Structure and Student Support

13. Provide tiered service delivery models to reflect multiple levels of differentiation. Many LEAs have developed tiers of differentiated services for students based on their skills, abilities and unique learning needs. These tiers typically include enrichment and/or differentiation in general education classes, separate services provided by AIG teachers, and grade level acceleration. Each tier should have specific identification criteria and service delivery characteristics, with the services provided for students at each tier clearly supported in each student's Differentiated Education Plan (DEP). Movement of students across tiers should be encouraged and monitored, and the DEPs appropriately revised to maximize student achievement and movement into more challenging educational offerings, especially at the secondary level.

14. Add "High Potential" as a component to the State's annual headcount to show the number of minority students with potential for being considered for AIG services. Specific screening, identification, and placement criteria; a well-defined curriculum that aligns with placement criteria; and a strong instructional program should exist to help nurture and support students. The intent of helping minority students move into higher levels of differentiation and advanced classes and, when appropriate, be recognized as AIG students should be explicit. Annual monitoring should occur to indicate the success of student movement into higher levels of differentiation.

15. Prepare and support minority students in advanced courses and programs from Kindergarten through 12th grade. Some schools and LEAs cited various efforts to support minority students as they entered and pursued advanced courses. All districts are encouraged to include support strategies in their schools and programs. Addressing the social/emotional needs of minority students as they move into more advanced courses is particularly critical. All LEAs should provide for such support in their AIG programs and advanced courses. Some strategies noted in LEAs visited by DPI staff include:

a) Clustering students together in the same class for peer support when only a few minority students enroll in an advanced course.
b) Pacesetter classes, which serve as "Pre-AP" courses in English, mathematics, and Spanish. These courses are based on rigorous standards and are supported by intensive professional development for the teachers who teach them.
c) AVID or other formal program structures that provide systematic support for minority and/or other students who are entering rigorous programs for the first time.

Rigor in All Programs

16. Broaden minority exposure to advanced curriculum at the elementary and middle school levels, regardless of AIG identification. Schools should eliminate tracking and increase the rigor in all course offerings at the elementary and middle school levels. Remove courses that are inadequately challenging from the school curriculum altogether. Students needing additional help in making the transition to more challenging curricula could be aided by the development of intensive Saturday and/or Summer Academies, support classes, mentoring and other similar strategies.

17. Enhance minority students' educational experiences by (1) raising the degree of difficulty of Honors courses to approximate the challenge of AP courses and (2) redouble efforts to encourage minority students in Honors courses to enroll in AP courses. Minimizing avenues toward choosing or steering minority students toward "easier" classes should be an objective.

18. Establish increased rigor and standards for Honors courses. This study supports the current DPI initiative for all schools to establish guidelines for increased rigor and standards for all Honors courses.

19. Retain or increase program rigor of AIG services; prepare students for more rigor. The outcome of any efforts to increase minority representation in AIG and advanced courses should **not** include reduced rigor. In fact, increased focus and rigor in existing programs and services for some systems is currently needed. The inclusion of minority students should not come at the expense of program quality. At the same time, many low-income and minority students who show potential but may not currently meet identification criteria may need to be "groomed" for programs by enhanced differentiation and accelerated instruction. The DPI should consider the development of guidelines that provide standards for LEAs as to the nature of each level of service (see Recommendation #13): what is included, the minimal level of rigor, etc., to better ensure that these levels are not just diffused enrichment.

Student Motivation

20. Explore rewards for high academic performance in challenging courses. Individual rewards should be coupled with rewards for teams of students, following the strategy employed by Moses' Algebra Project and other university-based summer programs. This would merge cooperation and competition. This "cooperative learning" model is gaining increasing currency and is worth exploring.

21. Attend to the extracurricular activities that create time pressures and draw students away from rigorous courses. Examples might include adjusting practices for interscholastic sports teams and/or making certain that no interscholastic sports events are scheduled to start after a certain time on school nights. Carefully monitored after-school study halls with peer tutor support should be available, especially for students whose practices do not begin immediately when the school day ends. However, other research (e.g., Finn, 1989; Holland & Andre, 1987) suggests that extracurricular activities often help keep low-achieving students in school. So helping students to balance rigorous coursework with non-academic interests is important.

22. Explore alternative scheduling structures to eliminate or reduce course conflicts. Based on the survey data collected for this study, the second-most common reason given by high schools for why qualified students choose not to enroll in advanced courses was that those courses conflicted with other courses they were taking. Schools such as Ashbrook High School in Gaston County (see Section IX) may serve as models for how scheduling can be manipulated to eliminate this particular administrative barrier.

Data/Information

23. Consider the feasibility of collecting additional state-level data that might assist in monitoring the success of **all** students and conducting related studies. Facilitating change requires good information. Additional data for individual students in the state databases that would be helpful include course grades and parental background information (e.g. occupation, level of education). Income would be desirable (although more controversial); but it would help researchers to better sort between race and class effects, for example. Improved capacity to follow students longitudinally is important so that it is possible, for example, to determine what courses a student who was AIG-identified in third-grade subsequently takes in high school. The NC WISE (NC Window of Information for Student Education) student database currently under development and due for implementation in a few years should make this latter recommendation possible.

24. Locate LEAs and/or schools with strong minority representation in more challenging curricula and study them for lessons that can be applied to others. This "effective schools" study approach may add to the findings of these studies conducted for this report and provide strategies for other LEAs and schools to emulate.

Final Note

Article 9B has provided the opportunity for LEAs to create innovative, progressive programs that are shifting from the traditional identification procedures using standardized cognitive and achievement tests that have been the norm for the majority of the programs across the nation to one where giftedness is perceived as having multiple forms, and is developmental and process oriented (Maker, 1996). For this emerging paradigm shift to occur and for the many initiatives underway in all AIG programs across the state, time is a crucial element in allowing these changes to be fully implemented and in determining their ultimate impact. The state must

maintain support for these efforts for a sufficient period of time in order to assess properly the results of these changes. Diligent monitoring is essential to insure that minority students are being offered the opportunities to be challenged and are moving into levels of AIG program differentiation.

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Appendix A

Table 1A: High School AP Course Regression Results

AP Biology	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
Disparity Index	.364	.433	-	-
ABCs Performance Composite	62.32	10.32	-.136	-1.202
% of students eligible for free/reduced lunch	23.90	14.01	-.030	-.237
Average daily membership	1178.09	442.72	-.053	-.611
% of students who are minority	31.14	21.08	.044	.317

* - variable is statistically significantly related to Disparity Index.
Note: Analysis based on data from 189 high schools.

AP Calculus	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
Disparity Index	.380	.953	-	-
ABCs Performance Composite	61.70	10.81	-.198	-2.036
% of students eligible for free/reduced lunch	25.80	14.93	.160	1.54
Average daily membership	1041.31	433.40	.060	.967
% of students who are minority	31.36	22.74	-.281*	-2.36

* - variable is statistically significantly related to Disparity Index.
Note: Analysis based on data from 272 high schools.

AP English	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
Disparity Index	.378	.428	-	-
ABCs Performance Composite	62.01	10.30	-.314*	-3.46
% of students eligible for free/reduced lunch	25.03	13.75	-.131	-1.28
Average daily membership	1044.21	431.04	-.024	-.035
% of students who are minority	31.06	21.64	-.088	-.078

* - variable is statistically significantly related to Disparity Index.
Note: Analysis based on data from 270 high schools.

AP History	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
Disparity Index	.319	.309	-	-
ABCs Performance Composite	62.27	10.78	-.281*	-2.91
% of students eligible for free/reduced lunch	24.41	13.90	-.157	-1.54
Average daily membership	1086.28	438.52	-.038	-0.54
% of students who are minority	30.24	22.01	.260*	2.34

* - variable is statistically significantly related to Disparity Index.
Note: Analysis based on data from 236 high schools.

Table 2A. High School Honors Courses Regressions Results

Honors Biology	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
Disparity Index	.709	.912	-	-
ABCs Performance Composite	61.51	11.89	-.345*	-1.94
% of students eligible for free/reduced lunch	27.75	15.32	.088	0.45
Average daily membership	1040.26	418.23	.038	.033
% of students who are minority	34.01	24.03	-.457*	-2.09

* - variable is statistically significantly related to Disparity Index.
Note: Analysis based on data from 108 high schools.

Honors English	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
Disparity Index	.544	.338	-	-
ABCs Performance Composite	61.04	11.36	-.286*	-3.17
% of students eligible for free/reduced lunch	26.62	15.86	.007	0.07
Average daily membership	1003.37	439.99	.106	1.70
% of students who are minority	32.61	23.36	.068	0.63

* - variable is statistically significantly related to Disparity Index.
Note: Analysis based on data from 304 high schools.

Honors History	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
Disparity Index	.537	.280	-	-
ABCs Performance Composite	60.88	11.23	-.298*	-3.16
% of students eligible for free/reduced lunch	26.24	15.39	-.179	-1.74
Average daily membership	1071.42	434.00	.038	0.57
% of students who are minority	33.54	23.27	.307*	2.69

* - variable is statistically significantly related to Disparity Index.
Note: Analysis based on data from 241 high schools.

Table 3A. Middle School and Elementary AIG/Honors Courses Regression Results

Middle School Language Arts (AIG/Honors)	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
% minority in Course	19.65	20.75	-	-
ABCs Performance Composite	76.03	9.38	-.108	-1.38
% of students eligible for free/reduced lunch	42.35	17.57	-.071	-.809
Average daily membership	729.92	245.23	.061	1.06
% of students who are minority	35.64	24.15	.723*	9.21

- variable is statistically significantly related to Percent Minority in Course.
Note: Analysis based on data from 153 middle schools.

Middle School Math (AIG/Honors)	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
% minority in Course	20.31	22.24	-	-
ABCs Performance Composite	77.98	8.70	.02	.27
% of students eligible for free/reduced lunch	42.46	18.47	-.05	-.50
Average daily membership	703.29	264.13	-.08	-1.18
% of students who are minority	35.61	24.94	.86*	9.28

* - variable is statistically significantly related to Percent Minority in Course.
Note: Analysis based on data from 94 middle schools.

Elementary Language Arts (AIG)	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
% minority in Course	16.56	23.98	-	-
ABCs Performance Composite	74.05	9.07	-.14	-1.40
% of students eligible for free/reduced lunch	47.96	19.21	.03	.27
Average daily membership	538.64	203.34	-.11	-1.38
% of students who are minority	37.12	27.83	.62*	5.72

- variable is statistically significantly related to Percent Minority in Course.
Note: Analysis based on data from 99 elementary schools.

Elementary Math (AIG)	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
% minority in Course	14.65	23.67	-	-
ABCs Performance Composite	75.52	8.70	.07	.61
% of students eligible for free/reduced lunch	45.67	18.26	.25	1.89
Average daily membership	559.64	206.03	-.02	-.27
% of students who are minority	36.92	26.78	.61*	5.38

* - variable is statistically significantly related to Percent Minority in Course.
Note: Analysis based on data from 73 elementary schools.

Elementary Combined Language Arts/Math (AIG)	Mean	Standard Deviation	Standardized Coefficient Estimate	t-statistic
% minority in Course	17.88	24.36	-	-
ABCs Performance Composite	77.79	8.70	-.20	-1.52
% of students eligible for free/reduced lunch	45.81	21.10	-.23	-1.66
Average daily membership	510.64	216.32	-.09	-.83
% of students who are minority	33.62	24.18	.54*	4.09

* - variable is statistically significantly related to Percent Minority in Course.
Note: Analysis based on data from 89 elementary schools.